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HYPERTENSION AND HYPERGLYCEMIA

OBSERVATIONS IN A SERIES OF FORTY-SIX CASES

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PHILADELPHIA

The study of cases of hypertension and nephritis not uncommonly reveals hyperglycemia and glycosuria. Numerous observers have offered explanations for the simultaneous occurrences of these two conditions. Herrick [1] reviews the literature, summarizes the views of previous observers and presents his conclusions, based on the personal study of six patients over a period of three years. He states that:

> In 1910, Neubauer noted the occurrence of these two conditions and offered the unproved theory that excessive activity of the suprarenals was the underlying factor. In this country, O'Hare first established the fact of a decline in tolerance for carbohydrate in certain examples of high blood pressure. He offered the theory that sclerosis of the arteries of the pancreas might be the pathologic background for the condition. Pearce and Keith suggested that, because a diseased kidney is unable to utilize the ordinary amount of sugar brought to it by the blood, diminished sugar consumption results, with increased accumulation of this substance in the blood stream. Meyers and Killian noted the increase of the diastatic activity of the blood in examples of nephritis, and expressed the idea that this might account for the hyperglycemia often noted in such cases. Härle, in a study of a series of cases of hypertension, failed to discover any exact parallelism in the curves of blood pressure and blood sugar. . . . Härle concluded that hypertension and hyperglycemia are not the common result of increased activity of the chromaffin system. Botti found that, in the presence of hypertension, blood sugar is increased and sugar tolerance is lessened. . . . Janeway noted a tendency to hypertension in elderly patients having diabetes with arteriosclerosis. Rosenbloom, in a study of the blood pressure in diabetes, concluded that in the average case the blood pressure tends to be below normal. However, when arteriosclerosis or nephritis is present, the blood pressure is often elevated. Recently, Kylin has described the association of lowered carbohydrate tolerance with hypertension.

O'Hare [2] believes that his observations, as the result of twenty-five glucose tolerance tests, done in twenty-three cases of chronic vascular hypertension, indicate that persons showing chronic vascular hypertension are potential diabetic as well as nephritic patients; but time alone will tell.

Herrick,[1] from personal observation, is led to believe that the occurrence of high blood pressure and increased concentration of glucose in the blood is present in a definite group of cases characterized by four cardinal symptoms: hypertension, hyperglycemia, obesity and arteriosclerosis.

A review of the histories of forty-six patients [3] who had a systolic blood pressure of 150 mm. of mercury or more and glycosuria presents very interesting data.

When they first came under our observation, five patients were from 30 to 40 years of age; twelve, from 41 to 50; twenty, from 51 to 60, and nine, from 61 to 70 years.

Thirty-six patients knew that they had glycosuria previous to their routine medical examination. These patients were informed by us of the dangers of obesity and overeating, with the attendant results of hypertension and glycosuria, and advised to consult their physicians, that their diet might be regulated. At the end of one year it was our privilege to reexamine thirty-seven of these patients; two of the original group had died and the remaining seven could not be located.

According to the history given by these patients, sugar had been discovered in their urine for the first time, as follows: Eight patients, from 30 to 40 years of age; nineteen, from 41 to 50; sixteen, from 51 to 60, and three, from 61 to 70 years.

Of the eight patients who were 40 years of age or less when glycosuria was first discovered, and who now have a systolic blood pressure of 150 mm. or more, two had the cardinal symptoms of diabetes mellitus and were 32 and 40 years of age, respectively, when the disease was first recognized. The third patient, when 34 years of age, was operated on for a pancreatic cyst, and at present, four years later, presents the symptoms of diabetes mellitus. He lost 34 pounds (15 kg.) after the operation, and at present is 14.8 per cent. above the standard weight for his height and age. Glycosuria was discovered in the fourth patient following an attack of grip with abdominal symptoms. The mild glycosuria persisted for one year with no other symptoms. The blood sugar is 0.129 per cent. on fasting. Four patients are exceedingly nervous and, except for glycosuria, hyperglycemia and obesity and a systolic pressure of 150 mm. or more, do not complain of any other symptoms. They probably represent glycosuria of endocrine origin.

HISTORY

A family history of pulmonary tuberculosis was present in only one of the patients. Diabetes occurred in the families of two of the patients in this series. Habitual overeating and obesity were present in the history of thirty-seven patients. Eight patients, according to their history and from our observations, were of

1. Herrick, W. W.: Hypertension and Hyperglycemia, J. A. M. A. 81: 1942 (Dec. 6) 1923.
2. O'Hare, J. B.: Glucose Tolerance Test in Chronic Vascular Hypertension, Am. J. M. Sc. 160: 366 (Sept.) 1920.
3. These patients were discovered in a health survey of 5,706 police, [illegible] and firemen of the city of Philadelphia, under the supervision of Dr. Frank A. Craig of the Phipps Institute of the University of Pennsylvania.

the extremely nervous type. One patient was operated on, seven years prior to our first observation, for a cyst of the pancreas. Sugar was discovered in twenty-nine instances in the course of a routine medical examination, for promotion in the police or fire service or when applying for life insurance.

SYMPTOMATOLOGY

Ten patients were symptom free. Twenty-six patients complained of two or more of the cardinal symptoms of diabetes mellitus; viz., increased thirst, increased appetite, polyuria, loss of weight and thirst. Pain in the back was complained of by six patients. Two patients complained of wounds or injuries healing slowly. Three patients stated that the only symptom they had was excessive nervousness. One patient was suffering from hemiplegia and another from gangrene of the toes, this being the first and, with glycosuria, the only symptoms. One patient complained of neuritis in the right arm, and another stated that since an attack of influenza he had never felt strong and had had glycosuria. One patient complained of cataract of the eye as the only impairment of health.

Polydypsia and polyuria were present in twenty-six cases and absent in twenty cases. Polyphagia was present in twenty-eight cases and absent in eighteen cases. Sixteen patients of the series could be diagnosed clinically as having diabetes with all the cardinal symptoms present.

TABLE 1.—*Weight of Patients*

Weight in Pounds	Best Weight	Weight at Time of Our First Observation
130 to 139	..	4
140 to 149	5	3
150 to 159	1	8
160 to 169	2	7
170 to 179	2	5
180 to 189	9	6
190 to 199	6	4
200 to 209	6	3
210 to 219	4	1
220 to 229	6	4
230 to 239	2	..
240 to 249	1	..
250 to 259	1	..
260 to 269	..	1
270 to 279	1	..

TABLE 2.—*Percentage Above or Below Normal at Patient's Best Weight*

1 case	10% below normal
5 cases between	1% and 10% above standard
7 cases between	10% and 20% above standard
11 cases between	20% and 30% above standard
14 cases between	30% and 40% above standard
8 cases between	40% and 50% above standard
2 cases between	50% and 60% above standard
2 cases between	60% and 70% above standard
1 case	100% above standard

Many of the patients complained of shortness of breath "on effort," which is more or less commonly present in the obese. None of the patients showed any signs of inadequate compensation or of heart failure, unless one considers the shortness of breath of the obese to be a symptom of myocardial damage. Undoubtedly, circulatory disorders are more frequent and manifest earlier in life in the obese than in persons of normal weight.

Definite dental infection was present in 30 per cent of the patients. Neuritis and pains in various parts of the body were invariably associated with focal infection. The vague pains complained of in various parts of the body, especially in the back, may have been due to a more or less rapid loss in weight with the relaxation that follows the loss of support to the various structures of the body.

BLOOD PRESSURE

The condition of the radial blood vessels and a systolic pressure in excess of 150 mm. on three different occasions furnished the basis for the grouping of this series of cases. The patients whose blood pressure fell below 150 mm. on one or more occasions were not included in this group. The diastolic blood pressure ranged from 80 to 100, except in four patients, who had a diastolic pressure of from 100 to 110 mm.

One year after our first observations were made, thirty-one patients showed a reduction in their blood sugar percentage, and a decrease ranging from 0 to 10 mm. in the systolic blood pressure. The diastolic blood pressures were practically unchanged. Two of the series died of uremia during the first year of observation. Four patients of the series showed an increase in blood pressure at the end of the first year. Their urines, examined at the beginning and at the end of the year, showed a trace of albumin, with hyaline and granular casts. This condition was evidently due to a degenerative lesion of the kidneys.

The blood pressure findings in diabetic patients are not constant, and depend on other factors than the lesions of diabetes.

Low blood pressures frequently are encountered in diabetic patients. This observation is not equivalent to stating that low blood pressure eliminates the possibility of arteriosclerosis. Not infrequently, sclerotic changes are present with the systolic blood pressure persistently normal or below normal.

TABLE 3.—*Percentage Above or Below Standard Weight When Patient First Came Under Observation*

1 case	12% below standard weight
5 cases between	1% and 9% below standard weight
20 cases between	1% and 10% above standard weight
11 cases between	10% and 20% above standard weight
10 cases between	20% and 30% above standard weight
4 cases between	30% and 40% above standard weight
3 cases between	40% and 50% above standard weight
2 cases between	50% and 60% above standard weight

Likewise, increased blood pressure, including essential hypertension, accompanying glycosuria or diabetes mellitus is not always due to sclerotic changes. Increased blood pressure may occur in exceedingly nervous patients, in women, often at the menopause, possibly endocrine in origin; and in men, without any evident changes in the blood vessels or the kidneys.

ARTERIOSCLEROSIS

Palpation of the superficial blood vessels of these patients reveals no greater thickening than one would expect according to the age of the patient. Arteriosclerosis may exist in the internal organs and structures of the body without any external evidences of the condition. The absence of changes in the superficial vessels does not, therefore, negative the existence of changes in the viscera and the tissues of the body.

Best, Smith and Scott [4] believe that many cells of the body, other than those in the pancreas, develop an insulin-like substance. Sclerotic changes, either general or local, are capable not only of raising the systolic

4. Best, C. H.; Smith, R. G., and Scott, D. A.: Insulin-like Material in Various Tissues of Normal and Diabetic Animal, Am. J. Physiol. 68: 161-182 (April) 1924.

blood pressure but also of reducing the function of the cells of the body.

One cannot escape the conviction that the degenerative changes that take place in the body, when affecting the structures that are involved in carbohydrate metabolism, of necessity must impair their efficiency and result in hyperglycemia and glycosuria.

Obesity, which frequently favors the development of sclerotic changes, results at times in a rise in blood pressure and a diminishing ability of the body cells to utilize carbohydrate.

The blood pressure is normal or subnormal in at least 50 per cent. of persons with arteriosclerosis, either general or local. A persistent low blood pressure does not preclude the existence of arteriosclerosis.

URINARY FINDINGS

Glucose was present in varying quantities in the urine of every patient under observation. The urine of thirty of the patients was negative for albumin and casts; twelve patients showed a trace of albumin and hyaline casts, and four patients showed traces of albumin with hyaline and granular casts. These four patients were more than 50 years of age.

Sixteen were clinically classified as active diabetic patients, with all the cardinal symptoms present.

The only symptoms presented by twenty-six patients of this series were glycosuria with polydypsia and polyria.

Ten of the patients with low blood sugar concentration and with no symptoms were examined to determine whether the condition could be diagnosed as renal glycosuria. No case filled the requirements to be so classified.

SUMMARY AND CONCLUSIONS

1. A study was made of forty-six patients with glycosuria and a systolic blood pressure of 150 mm. or more.

2. The ages of the patients varied from 30 to 70 years.

3. Forty-five of the forty-six patients, when they came under our observation, ranged from 1 per cent. to 60 per cent. overweight.

TABLE 4.—*Blood Sugar Determinations*

2 patients'	blood sugar ranged from 80 to 99 mg. per 100 c.c. blood
10 patients'	blood sugar ranged from 100 to 119 mg. per 100 c.c. blood
6 patient's	blood sugar ranged from 120 to 129 mg. per 100 c.c. blood
4 patients'	blood sugar ranged from 130 to 139 mg. per 100 c.c. blood
1 patient's	blood sugar ranged from 140 to 149 mg. per 100 c.c. blood
2 patients'	blood sugar ranged from 150 to 159 mg. per 100 c.c. blood
1 patients'	blood sugar ranged from 160 to 170 mg. per 100 c.c. blood
2 patients'	blood sugar ranged from 181 to 199 mg. per 100 c.c. blood
5 patients'	blood sugar ranged from 200 to 240 mg. per 100 c.c. blood
5 patients'	blood sugar ranged from 300 to 385 mg. per 100 c.c. blood
1 patient's	blood sugar ranged from 440 to 445 mg. per 100 c.c. blood
3 patients'	blood sugar ranged from 500 to 575 mg. per 100 c.c. blood

4. Thirty-six patients of the series weighed more than 200 pounds (91 kg.) at some period in their lives.

5. Sixteen can be classified as having fully developed diabetes.

6. Albumin and hyaline casts were present in the urine of twelve patients, and four showed albumin with hyaline and granular casts.

7. Endocrine disturbances may be responsible for glycosuria, increased blood pressure and obesity without arteriosclerosis.

8. The blood pressure findings in diabetic patients are not constant, and depend on other factors than the lesions of diabetes.

9. Degenerative changes that take place in the body, when affecting the structures involved in carbohydrate metabolism, of necessity must impair their efficiency and result in hyperglycemia and glycosuria.

10. Obesity frequently favors the development of sclerotic changes in the body, which are capable of producing an increase in the blood pressure and a diminished ability of the body cells to utilize carbohydrate.

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TUMORS OF THE TESTIS, SIMULATING EPIDIDYMITIS *

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It has long been realized that it is difficult and often impossible for even those of the greatest experience to arrive at an accurate diagnosis in scrotal tumors. The possibilities of error are innumerable, and I myself do not believe that any one is infallible.

ILLUSTRATIVE CASES

I report in detail the following cases, as they illustrate (1) the difficulty of making a correct diagnosis; (2) the extreme importance of arriving at this diagnosis at the earliest possible moment, and (3) the wisdom in any doubtful situation of exploration of the scrotal contents.

CASE 1.—W. E. F., a man, aged 32, seen in consultation with a surgical colleague in July, 1912, had been suspected of having lung tuberculosis for years, although the tubercle bacillus had never been found in the sputum. He had always lived and worked under the very best of hygienic conditions, but had been always underweight and a semi-invalid. During the past ten years he had lost about 20 pounds (9 kg.). For years he had had to urinate once at night. A few days before I saw him, he had noticed a hard lump in the right side of the scrotum. This was moderately tender and painful. Frequency of urination somewhat increased day and night, with moderate urgency, but no dysuria. The patient was spare and sallow. The right epididymis was much enlarged, indurated and tender, especially at the upper pole. The sulcus between it and the testis was not distinct. The vas was moderately thickened and rather firmer than normal, and there was slight tenderness in the right groin. The left side of the scrotum was normal. The prostate felt normal, as did the left seminal vesicle; but the right seminal vesicle was definitely indurated and rather nodular. The urine was slightly hazy and contained a few leukocytes. The surgeon had already made a diagnosis of tuberculous epididymitis and I concurred in this diagnosis, not only on account of the local, but also on account of the general condition of the patient. I advised immediate epididymectomy. The surgeon objected to this on the grounds of a mortality of about 2 per cent. and instead recommended further hygienic measures, combined with tuberculin. This treatment was carried out under the ideal conditions obtaining at Saranac Lake, N. Y. The patient gained more than 10 pounds (4.5 kg.), and his general condition greatly improved. On the other hand, the scrotum steadily increased in size. At the end of eight months the surgeon performed an orchiectomy, which revealed a new growth of the testis. Dr. J. H. Wright, pathologist at the Massachusetts General Hospital, who examined the specimen, reported that the tumor tissue consisted essentially of rather large, round, vesicular-nucleated cells and a connective tissue stroma. The cells in places were arranged in ill defined groups and masses in the stroma, which was in general relatively small in amount as compared with the cellular elements. He considered the tumor malignant, and a round cell sarcoma. The specimen was subsequently sent to

* Read before the American Association of Genito-Urinary Surgeons, Stockbridge, Mass., May 27, 1924.

Prof. James Ewing of Cornell University, who said: "It is a typical large round cell sarcoma of the testis. Chevassu would, I think, at once recognize it as his 'Seminome.' I regard it as an embryonal carcinoma and a part of a teratoma which has overgrown all other elements. . . . I fear that the prognosis is very uncertain; it depends on the size and encapsulation of the growth. I have seen recoveries after operation in early cases." No trace of tuberculosis was found by either of these pathologists, nor was any mention made of the condition or even of the presence of the epididymis. The patient made a good recovery from the operation, but died about two years later of internal metastases.

Case 2.—G. G., a youth, aged 19, seen in consultation with a well known urologist in September, 1918, when about 5 years old had had a swollen gland in the neck, which persisted for some time but finally subsided. He had grown extremely rapidly and evidently had little resistance to infection. He had acute parotitis a year before, with left orchitis. In the winter of 1917, while in the Aviation Corps, he had had a severe tonsillitis with general infection, followed later by what was apparently appendicitis. Operation was performed and a moderately inflamed appendix removed. During the operation it was noted that there were several large mesenteric glands, which in themselves might have accounted for the abdominal symptoms. Shortly after this operation there occurred an acute infection of the right scrotum. The patient was seen by a urologist, who thought at first that it was an involvement of the testis. The symptoms gradually subsided, following which the patient had an attack of measles, with good recovery. The condition of the right scrotum had varied from subacute to chronic, but was now quiescent. There were no urinary symptoms; the urine was said to be normal. The patient's general condition had been improving, owing to a persistent outdoor life. He had been under observation continuously by a competent internist, who found no evidence of lung tuberculosis. The patient was tall, thin and overgrown. The abdomen was normal. The left testis was markedly atrophied. The right scrotum was the size of a goose egg, tense, elastic, slightly tender, said to be translucent, and had been tapped once with the evacuation of a small amount of fluid. Posteriorly there was a marked enlargement of the epididymis, which was indurated and nodular. The vas was apparently normal. By rectum there was a little thickening of the prostate and vesicle on the right side, but nothing abnormal noted on the left. Here again I concurred in the diagnosis of tuberculous epididymitis. I advised immediate operation as in the previous case, but here also the surgeon believed in the efficacy of palliative measures. These were carried out; but, as the scrotal tumor continued to increase in size, the patient consulted a third surgeon, who advised and performed orchiectomy in October, 1919, eleven months after being seen by me. The specimen was examined by Dr. J. H. Wright, who said: "The testis is enlarged and about 9 cm. in its greatest dimension. The epididymis is stretched over its surface. On section the testicular tissue is extensively spread out over an encapsulated tumor. The tumor is composed largely of a soft, whitish to yellowish tissue, the latter being necrotic. In places there are small cysts and small masses of bony or cartilaginous tissue. The gross, as well as the microscopic appearances of sections show that the tumor is a combination of 'embryonal carcinoma' and teratoma elements. The carcinomatous element is not, as was at first thought, like that of the common malignant tumor of the testis. Better sections show the carcinoma element to have a more complicated papillary adenomatous character. In view of this finding, I think the prognosis may be more hopeful." This view has so far prevailed, as the patient is living and in excellent condition, nearly five years since operation. Whether or not this happy outcome was influenced by two roentgen-ray treatments which the patient received after operation is difficult to state.

Case 3.—W. G., a man, aged 32, admitted to the Massachusetts General Hospital in January, 1924, with a diagnosis of pulmonary and genito-urinary tuberculosis, seen in consultation with Dr. Hugh Williams. He said that he was a "bleeder," and that after tonsillectomy twenty-two years before, "he nearly bled to death." Fifteen years before he had had a compound fracture of the elbow, and when the dressing was removed there had been a "gush of blood." He had had recurrent epistaxis since the age of 8. Two teeth had been extracted some time before, at which time he had bled so severely that the cavities had to be packed. The family history contained no evidence of tuberculosis or hemophilia. Three years before, the patient began to have a sharp, stabbing pain in the right testis, radiating to the groin and back, accompanied by swelling of the testis. Just before the onset of these symptoms, the patient received a slight injury to the testis. The pain had been periodic and progressive, and aggravated by overexertion. It was relieved by rest in bed and by heat. There had been no urinary symptoms. The patient had been hoarse for four years, and a diagnosis of tuberculosis of the larynx had been made. There had been marked dyspnea for a year, but no cough or hemoptysis. There had been occasional night sweats. There had been a gradual loss of weight during the past four years. The patient came to the hospital because of the severe pain in the right scrotum. The patient was poorly developed and nourished, and was very hoarse. Just above the clavicle there was a hard, movable gland the size of a walnut. The right scrotum was the size of a goose egg, tender and hard, the epididymis swollen and nodular, with a general thickening suggestive of testicular involvement. Further examination by me showed the prostate essentially normal, the right vas deferens much enlarged, the right seminal vesicle slightly indurated. Abdominal examination was negative. All urine examinations were negative. Examination of the chest showed signs that were compatible with tuberculosis, but unfortunately no roentgenograms were taken. After a good deal of study and disagreement by and among various members of the medical staff, with reference to the question of hemophilia, it was finally demonstrated by Drs. C. M. Jones and George Minot that the case was one not of hemophilia, but of chronic purpura hemorrhagica. Although I had committed myself to a diagnosis of tuberculous epididymitis, with involvement of the testis, I advised against operation in view of the purpura. The patient was, however, so insistent on operation that orchiectomy was performed by Dr. Hugh Williams, transfusion being done as a preliminary measure two days previously. Great care was taken to check all bleeding during the operation. Convalescence was slow and complicated by several severe hemorrhages and almost constant capillary oozing. During this time, transfusion was performed twice, with 200 c.c. and again with 500 c.c. of whole blood (Group IV). Hemorrhage finally ceased, the wound closed, and the patient was discharged, March 14, two months after admission. The pathologic examination made by Dr. H. F. Hartwell showed a solid tumor, the size of a tennis ball, with a portion of the spermatic cord. On section it showed a lobulated, grayish-white surface, with areas of purplish red softening. Microscopic examination showed clusters of large undifferentiated cells, arranged in indistinct alveolar clusters. They had hyperchromatic nuclei with many mitotic figures. There were large areas of necrosis. The diagnosis was embryonal carcinoma. Unfortunately, no mention was made of the epididymis. While so far as I know the patient is still alive, I now believe it possible, as I review the case in retrospect, that the condition of the chest, throat and testis was due to one and the same cause, namely, new growth with metastases.

SIMILAR CASES IN LITERATURE

While it seems improbable that cases similar to those just reported are unique, they are but rarely recorded in the literature, nor are they familiar to any of the pathologists, urologists or general surgeons with whom I have discussed the matter. Barringer and Dean [1] have, however, seen two similar cases. In discussing them they say:

> The tumors arise, with rare exception, from sex cells situated in the rete testis, and the teratoma may develop either toward the testicle and epididymis, involving both in a large tumor mass, or much more rarely, toward the epididymis, forming a typical tumor of the epididymis.
>
> Notwithstanding the situation of testicular tumors, making them easily accessible to palpation and observation, the diagnosis is often difficult. One of us vividly remembers doing an operation for hydrocele and noting at the time of operation that there was what we took to be an inflammatory change in the epididymis. The patient left the hospital healed. He went to another hospital a month later, where a teratoma testis was removed.

1. Barringer, B. S., and Dean, A. L., Jr.: Radium Therapy of Teratoid Tumors of Testis, J. A. M. A. 77:1237 (Oct. 15) 1921.

We have seen two cases in which the teratoma grew atypically and involved the epididymis alone, giving a picture not unlike tuberculosis of the epididymis.

Ewing [2] says:

It occurs to me that you have been meeting your cases of carcinoma of the testis very early, before the tumor has involved much of the testis. These tumors do not begin in the testis, but in the rete; and in the early stages there is as much of the growth in the epididymis as in the body of the testis. Later they expand and push the testis before them or invade it more or less. I have one early case in which the tumor is more in the epididymis, near the rete than in the testis. . . . The origin in the rete and tendency of some tumors to invade mainly the epididymis and cord has seemed to me to favor the view that these typical embryonal carcinomas are not seminomas, as Chevassu claims, but one-sided teratomas. . . . I know of no tumors which originate in the structures of the epididymis, strictly speaking.

That my experience in mistaking an early neoplasm of the testis for tuberculosis of the epididymis is not unique is shown by Hinman,[3] who says:

Tuberculosis more rarely presents difficulties and only in those rare instances of massive tuberculous epididymo-orchitis. The epididymis is the seat of primary election to tuberculosis, and the disease produces characteristic nodulation as it progresses. Mistaken diagnoses are possible, however, as the writer can testify, having both performed a radical operation for tuberculosis and delayed another in seminoma, thinking it was tuberculosis. Mistakes occurred in both cases after gross inspection, following orchiectomy and in consultation with an expert pathologist. It was only after careful microscopic study later that an exact diagnosis was made.

In regard to primary tumors of the epididymis, Hinman and Gibson [4] say, in their conclusions:

As regards tumors of the epididymis, sarcoma is again the most frequently occurring neoplasm, and at least ten authentic cases have been reported. Only one case of lipoma is reported, the reason probably lying in the fact that the epididymis normally contains no fat. Six cases of leiomyoma and four cases of carcinoma, including a personal case, may be considered authentic.

Teratoma of the epididymis does not occur, judging from the paucity of the literature of the subject. We have but the single instance recorded by Barringer [5] of a true teratoma occupying the entire epididymis with extremely little encroachment on the testicle, although Bland-Sutton [6] has reported a teratoma as arising between the testicle and the epididymis. It is the belief of the latter that testicular tumors arise from the paradidymis. The consensus of opinion as expressed by Ewing [7] is that testicular tumors arise in the rete testis. It is therefore probable that in the case of Barringer the point of origin was the same as for teratoma testis, but for some unknown reason the propagation was primarily into the epididymis rather than along the customary route into the testis.

CONCLUSIONS

It would appear, therefore, that neoplasms originating in the epididymis, although rare, certainly do occur; it is also apparent that tumors originating in the testis may and sometimes do involve chiefly the epididymis, especially in the early stages, and give rise to symptoms simulating a subacute or chronic inflammatory process, such as tuberculosis.

That this deceptive trait is not confined to one class of tumor is shown by my three cases, of which one was a sarcoma, one an embryonal carcinoma, and one an embryonal carcinoma combined with teratoma. Hinman's testimony, as well as that of Barringer, only confirms these statements. The fact that the patient with such a tumor of the scrotum may have active tuberculosis elsewhere only adds to the confusion.

In view of this evidence, I am of opinion that when there is any doubt whatever as to the diagnosis, an immediate exploratory operation should be advised. The fact that such an operation on the scrotum can be done under local anesthesia, that it involves but little confinement to bed, and that it is practically, if not actually without mortality, fully justifies the procedure, especially when, as is well known, an error in diagnosis may be so costly.

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2. Ewing, James: Personal communication to the author.
3. Hinman, in Cabot's Modern Urology, Ed. 2.
4. Hinman, Frank; and Gibson, T. E.: Tumors of the Epididymis, Spermatic Cord and Testicular Tumors, Arch. Surg. 1: 100 (Jan.) 1924.
5. Barringer, B. S.: Internat. J. Surg. 33: 116, 1920.
6. Bland-Sutton, John: Lancet 2: 1406 (Nov. 13) 1909.
7. Ewing, James: Neoplastic Diseases, Philadelphia, W. B. Saunders Company, 1921, p. 779.

ADIPOSIS DOLOROSA

REPORT OF A CASE WITH INCREASED SUGAR TOLERANCE AND EPILEPTIFORM CONVULSIONS *

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In October, 1921, Drs. H. I. Davis and Seymour J. Cohen [1] presented before the Chicago Neurological Society a case of adiposis dolorosa with diminished sugar tolerance. The case reported here presents the opposite condition, increased sugar tolerance. It is of additional interest in the association of epileptiform attacks and, finally, because of the marked improvement following the administration of thyroid and pituitary substance.

REPORT OF CASE

A white woman, aged 19, was referred to us because of unconscious spells, with and without convulsive movements. The first of her attacks occurred in November, 1923. She suddenly lost consciousness, fell, frothed at the mouth, and had general convulsive movements. Similar attacks had recurred ever since, eleven days having been the longest interval between the seizures. She also had been having brief spells of unconsciousness unaccompanied by convulsive movements (petit mal). The attacks averaged ten or twelve a day, and were diurnal and nocturnal; she had bitten her tongue, bruised herself, and burned her hand by falling against a stove. She was irritable, distinctly dull mentally, and complained of marked general weakness.

A history of smallpox, scarlet fever, measles and chickenpox in childhood was given. The patient had always been large, but of good general health. She had been a fair student. Married at 18, she had never been pregnant; but, since July, 1923, her menses had been irregular and abnormally frequent.

The family history was negative, except that a first cousin had epilepsy.

The patient was of average height and weighed 192 pounds (87 kg.). All over her body and extremities were masses of painful adipose tissue having the characteristic "bunch of worms" sensation (generalized, diffuse type). She stated that her flesh bruised readily; it was so sensitive that when lying down she would frequently have to change her position on account of the soreness resulting from pressure. A general neurologic examination, including pupils, reflexes, sensation, motion and coordination, was negative. The thyroid was slightly enlarged. The heart sounds were normal; the pulse rate was from 90 to 100. The urine was normal, and a blood Wassermann test was negative.

Chemical examination of the blood revealed: blood sugar, 95.2 mg. per hundred cubic centimeters; total nonprotein nitro-

* Read before the Spokane County Medical Society, Nov. 13, 1924.

1. Davis, H. I., and Cohen, S. J.: A Case of Adiposis Dolorosa, Arch. Neurol. & Psychiat. 7: 274 (Feb.) 1922.

gen, 31.8 mg.; urea, 16 mg.; creatinin, 1.52 mg., and uric acid, 2 mg.

The sugar tolerance test after fast revealed 99 mg. of blood sugar per hundred cubic centimeters; after one hour, 111 mg.; after two hours, 66 mg., and after three hours, 80 mg. The urine at the beginning of the test showed a specific gravity of 1.028; after one hour, 1.008; after two hours, 1.006, and after three hours, 1.014. At no time did sugar appear in the urine.

The basal metabolic rate was plus 7.

It will be noted that our patient presented all four of the cardinal symptoms of Dercum's disease: (1) fatty deposit, (2) pain, (3) general asthenia and (4) psychic phenomena.

Dried thyroids were given in gradually increasing doses until the patient was taking 4 grains (0.27 gm.) daily, also phenobarbital (luminal), 2 grains (0.13 gm.), daily. In addition, she was placed on a diet calculated to reduce weight.

By May 1, her weight had dropped to 181 pounds (82 kg.), and the painful areas had almost disappeared. Her epileptiform attacks had been reduced to nine in two weeks. At this time pituitary extract (posterior lobe) was added, with still further improvement resulting. When last seen (September 20) she weighed 171½ pounds (77.8 kg.) and reported having had only one spell during the preceding month. She was free from pain, able to do her house work, and mentally comfortable.

COMMENT

This strange and interesting malady was first described by Dercum[2] in 1888, under the title of a subcutaneous connective tissue dystrophy, and in 1892, with additional case reports, as adiposis dolorosa, by which name it is now generally known. As Dercum himself has since observed, the correct Latin term would be "adipositas dolorosa," or, better, "obesitas dolorosa."

According to Davis,[1] about 200 cases of Dercum's disease had been reported up to 1910, very little having been added in recent years to our knowledge of the condition. The case report of Davis and Cohen is noteworthy because of the careful laboratory studies, including blood, blood chemistry, basal metabolism (3.8 per cent. above normal) and a roentgenogram of the skull, the latter showing a normal sella. Among more recent articles is an interesting communication by Crummer[3] of Omaha, in which are reproduced front, side and rear views of a terra cotta votive offering, dating back to 300 B. C., and in corresponding positions the photographs of a nude adiposis dolorosa patient. Crummer draws a parallel between the two, believing that the image was offered by a sufferer from a like condition.

At least two prior cases of adiposis dolorosa associated with epilepsy have been reported, one by Dercum and one by Henry.

The chief interest in Dercum's disease relates to the rôle played by the ductless glands in its etiology. Changes have been found in the thyroid, pituitary, suprarenal glands, testes and ovaries. The pathologic findings, however, have not been constant. In two cases reported by Dercum, the thyroid was enlarged and the seat of calcareous infiltration. In another case of Dercum's, irregular atrophy of the thyroid was seen. Burr[4] reported a case with glioma of the pituitary, with atrophy of the thyroid, and sclerotic ovaries. Dercum and McCarthy[5] found adenocarcinoma of the hypophysis, hypertrophy of the right suprarenal gland and undeveloped testes. Guillain and Alquier[6] reported a hypophysis doubled in size; also an hypertrophied thyroid. One of us[7] found inflammatory changes in the thyroid and pituitary in two cases, the thyroid appearance suggesting alveolar carcinoma, with sclerotic ovaries in one of the cases.

In addition to the glandular pathologic changes, interstitial neuritis has been a frequent, almost constant finding, with degeneration of the columns of Goll and of the lateral tracts of the spinal cord, each in one instance.

In the light of this evidence, it would seem that the syndrome of adiposis dolorosa represents a polyglandular dysfunction, the pituitary and thyroid being the chief offenders, in the order named.

Waldorp,[8] in a clinical interpretation of adiposis dolorosa, relates the obesity to hypophysial dysfunction, and the muscular and cardiac asthenia to disturbance of the suprarenals or vegetative nervous system.

From the improvement in psychic symptoms following treatment as observed by us, we believe that the mental manifestations are chiefly toxic. The localized areas of painful adipose tissue, with the finding of neuritis in these areas, would explain the etiology of the pain. Waldorp also ascribed the pain to possible lesions in the thalamus. With this view we do not agree, as in the diffused types the bilateral distribution of the painful areas would be opposed to any single cerebral lesion.

It is through the accumulation of case reports that evidence is gradually collected, and it is with the hope that our case may add something to the slowly accumulating facts regarding Dercum's disease that it is reported.

Paulsen Building.

2. Dercum, F. X.: A Subcutaneous Connective Tissue Dystrophy of the Arms and Back, Associated with Symptoms Resembling Myxedema, Univ. M. Mag., December, 1888; Three Cases of a Hitherto Unclassified Affection, Resembling in Its Grosser Aspects Obesity, But Associated with Special Nervous Symptoms—Adiposis Dolorosa, Am. J. M. Sc. 104: 521, 1892.
3. Crummer, LeRoy: Adiposis Dolorosa, 300 B. C., J. A. M. A. 82: 1420 (May 3) 1924.
4. Burr, C. W.: J. Nerv. & Ment. Dis. 27: 519, 1900.
5. Dercum, F. X., and McCarthy, D. J.: Am. J. M. Sc., 1922, p. 994.
6. Guillain and Alquier: Arch. de méd. expér. et d'anat. pathol., September, 1906.
7. Price, G. E.: Adiposis Dolorosa: A Clinical and Pathological Study, with the Report of Two Cases with Necropsy, Am. J. M. Sc. 137: 705 (May) 1909.
8. Waldorp, C. P.: A Clinical Interpretation of Dercum's Disease, Endocrinology 8: 54 (Jan.) 1924.

RADIUM TREATMENT OF NEOPLASMS OF THE UPPER AIR PASSAGES*

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NEW YORK

This is a brief report based on my observation of 500 cases treated with radium during the last five years.

A great deal of the data and technic presented herewith belonged to the late Dr. George Stuart Willis. Approximately 1 gm. of the radium element in needles, tubes, plaques and packs has been available for use.

Several definite conclusions can be drawn from the observation of these cases, but further study with improved technic over a longer period of time will be necessary to determine the final status of radium therapy in neoplasms of the upper air passages. I am firmly convinced that one who uses radium intelligently must know the physics and chemistry of the subject, the biologic effects, and the technic of application. It would seem probable, therefore, that the best results will be obtained by the cooperation of the radium therapist and the skilled nose and throat surgeon.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

BENIGN CONDITIONS

In forty cases of angiomas of the nose, cheek and lip, uniformly good results have been obtained. As a rule, growths 2 cm. or less in diameter are needled with small 5 mg. platinum radium needles placed 0.5 cm. apart, and allowed to remain for two hours. In the more extensive growths, surface applications of gamma radiation are given in an erythema dose and repeated in from four to six weeks. In one case of cavernous angioma of the maxillary antrum, the pressure symptoms were relieved by heavy external irradiation.

Papillomas of the nose and tongue yield to radium successfully. Multiple papillomas of the larynx do not respond as well. The relative inaccessibility, and the difficulty in maintaining the radium needles in place may account for the poor results. In single papilloma of the vocal cord, surgical removal and implantation of small platinum radium needles in the adjacent tissue will tend to lessen the recurrences. In multiple papillomas, the procedure now is surgical removal, followed by external radium application to the larynx. Tracheotomy is advisable in children with multiple papillomas of the larynx.

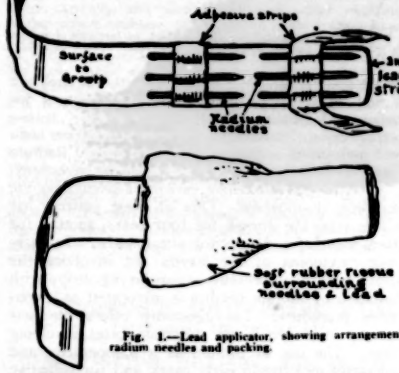

Fig. 1.—Lead applicator, showing arrangement of radium needles and packing.

In twenty cases of polyps of the nose, treated during the last six months, retardation of the growth and a longer freedom from recurrences has been noticed. However, the time interval is too short to permit the report of permanent results. Preexisting infection accountable for the polypoid condition should certainly be given attention. I believe that postoperative irradiation is indicated. The present treatment consists of the applications of an adjustable lead applicator with 50 mg. for from one to three hours, as shown in Figures 1 and 2.

In five cases of rhinoscleroma, three presented complete nasal obstruction due to the disease. This has been relieved by irradiation; in the other two cases, no clinical evidence of the disease remains. The diagnosis in all these cases was confirmed by a pathologic examination of tissue.

Fibromas of the nasopharynx are amenable to radium therapy.

In fifty cases of chronic tonsillitis, astonishingly good results have been obtained. However, I am of the opinion that surgical removal, when possible, is the treatment of choice.

MALIGNANT NEOPLASMS

Too much stress cannot be laid on the factors of bad teeth, tobacco and syphilis in the production of cancer. I am unable to recall a single patient with an intra-oral carcinoma in which one or more of these factors was not present. Certainly, in the treatment of these neoplasms the oral cavity must be made as aseptic as possible previous to radium treatment.

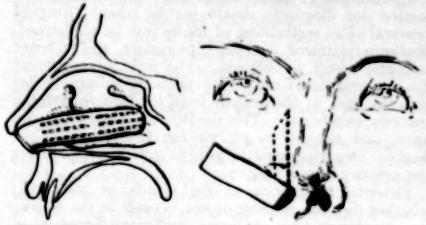

Fig. 2.—Irradiation of lateral wall of nose, ethmoid and sphenoid region, by adjustable lead applicator.

The reaction from radium is greater when complicated by infection. Ordinarily, the reaction from radium alone is not severe enough to cause worry.

In eleven cases of carcinoma of the maxillary antrum, three patients are markedly improved, two are unimproved, and six are dead. In ten cases of sarcoma of the antrum, four patients are improved, two are clinically free from the disease for two years, and four are dead.

A combined radium and surgical treatment for malignant neoplasms of the nose and accessory sinuses is advisable. External application of 1,000 mg. hours to each of four areas at a distance of 3 cm. is given preliminary to operation. This treatment, however, may be repeated with benefit.

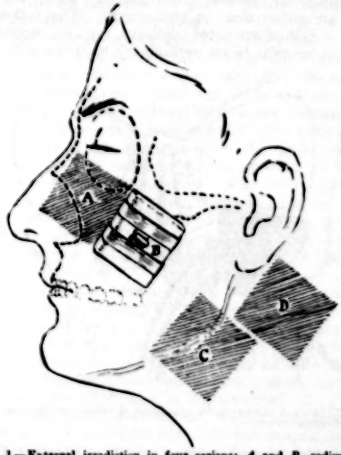

Fig. 3.—External irradiation in four regions; *A* and *B*, radium pack applied to antrum area; *C* and *D*, radium pack applied to lymph nodes.

Radical surgical removal within a few weeks plus internal irradiation of 100 mg. of radium for twenty-

four hours is done. Both internal and external treatments are repeated at intervals of from four to six weeks until the best result possible is obtainable. The methods of application are shown in Figures 3 and 4.

EPITHELIOMA OF THE LIP

Epithelioma of the lip can be diagnosed clinically, and section for diagnosis should not be taken. Surgical removal of an epithelioma of the lip is to be condemned. Radium treatment is a safer procedure, and a better cosmetic result is obtained. The technic consists of the implantation of small 5 mg. platinum radium needles into the base of the growth from the skin toward the mucous membrane. The needles are placed 0.5 cm. apart and allowed to remain for from four to six hours. One treatment is usually sufficient to remove the primary lesion (Fig. 5).

External application to the glands of the neck, whether they are palpable or not, is made in the following manner: One thousand milligram hours at a distance of 3 cm. is given to each of four areas on either side of the neck. The external treatment is repeated in those cases in which there are small, palpable glands. I am of the opinion that the extensive metastatic glands should be resected and the resection followed with irradiation. The implantation of bare emanation seeds at this time would seem to be a logical procedure, although I have had no cases in which this has been done.

Analysis of thirty-nine cases of epithelioma of the lip shows eleven patients free from the disease for more than a year, the average being 2.2 years. Five of the patients free from the disease had palpable glands, and three of these are now free for a period of three years. Seven patients have been treated during the last year, and are improved. Of the remaining twenty-one cases, four patients could not be traced, and the others are either dead or unimproved. The following causes of failure are noted: diabetes, syphilis, secondary infection, section taken preliminary to treatment, previous treatment with surgery, roentgen ray or radium, and hopelessly advanced conditions.

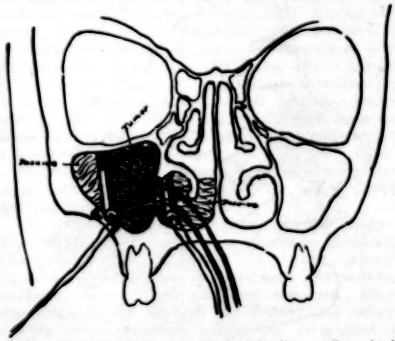

Fig. 4.—Internal irradiation by application of radium needles and tubes to growth within antrum.

Carcinoma of the tongue should be considered a condition to be treated with radium rather than surgery. Treatment of primary carcinomas of the anterior portion of the tongue gives good end-results, while in carcinomas of the posterior portion, and in advanced cases, palliative results are obtained that justify the treatment.

Carcinoma of the tonsil is not an uncommon condition, although the great majority of cases are referred for treatment late in the stage of the disease. Treatment of primary carcinoma of the tonsil yields good curative results, and advanced cases yield worth while palliative results. Implantation of 10 mg. platinum radium needles for a period of from six to eight hours into the growth and surrounding tissues 1 cm. apart is the present treatment. The glands of the neck are dealt with in a manner similar to that employed for epithelioma of the lip.

Fig. 5.—Treatment of epithelioma of the lip; *A*, implantation of radium needles into base of growth; *B*, penetration of radium needles into lip.

In sixty cases of carcinoma of the larynx, 90 per cent. showed metastases to the glands of the neck. Radium has been applied in two cases following laryngectomy, and, in four cases of early intrinsic carcinoma, the lesions have disappeared. One of these patients has been free from the disease for four years, another for eighteen months, and two for six months. In early intrinsic carcinoma of the larynx not involving the cartilage, removal under suspension laryngoscopy with implantation of radium needles is advocated as a conservative procedure. Laryngectomy offers the best chance for recovery in the intrinsic cases involving cartilage. The use of radium as a preoperative and postoperative measure in early cases, and for palliative effect in the advanced cases, is the apparent status of treatment today.

653 Park Avenue.

ABSTRACT OF DISCUSSION

Dr. Homer Dupuy, New Orleans: There is great liability of hemorrhage, profuse and alarming, in that region which is the seat of fibrosarcoma, at least in young subjects. One can avoid a death from inspiration of blood, and secure a better place for implanting needles, by performing a tracheotomy as a preliminary measure. That usually gives ample space to make the proper application of the needles. The slightest manipulation of these parts brings about severe and alarming hemorrhage; therefore, during the needle implantation, security is gained by packing the oral pharynx with gauze. This helps to prevent inspiration of food, to control hemorrhage, and bring the parts into the field of vision. In these cases I have applied the needles through the nose, and with the aid of air within, and traction, have been able to plant them properly, and in that way secure good results. I have had two cases, one more than a year ago, without recurrence. One patient was a boy, aged 12, who bled so profusely that I was compelled to perform a tracheotomy. Since then I have adopted this as a preliminary aid.

DR. JOSEPH C. BECK, Chicago: Dr. Robinson has been very fair in his presentation of the use of radium in the treatment of malignancy or nonmalignancy in the upper part of the body. It is rather difficult, if one undertakes this type of work, to keep away from overenthusiasm, in view of the startling results one sometimes obtains from the use of radium in these cases. I had a fairly long experience with radium, and I came to the conclusion that surgery—in an operative case—plus radium or the roentgen ray is the thing to use until we know more about the use of radium and the roentgen ray alone. There are no doubt some cases of carcinoma in which radium alone can be used by intralaryngeal application, but they are few and there is a great chance taken in the treatment by radium. In carcinoma of the upper jaw, the same as any carcinoma, the result depends on the type of neoplastic growth. Lymphosarcoma does not respond at all; round cell sarcoma responds to a degree at times; but if one has not been watching the case, all of a sudden it flares up and the patient quickly dies. The most tragic cases I have seen are those patients who apparently are well and in a short time they are dead. This question of the use of radium in the treatment of these cases needs to be studied carefully.

DR. G. ALLEN ROBINSON, New York: The point brought out by Dr. Dupuy is well taken. We should take no chances whatever with our patients in the application of radium. Certainly, with a tracheotomy the growth can be treated more carefully and slowly and with better implantation of the radium needles. My treatment in these cases in which there is profuse bleeding has been an application of a tube of radium on a flexible wire to the nasopharynx through the nose. After about four weeks, a fibrosis of the growth was produced so that radium needles could be applied without danger of hemorrhage. Two cases of sarcoma of the antrum, which are clinically free of disease for over two years, were, respectively, fibrosarcoma and polymorphous cell sarcoma. In the treatment of malignancies of the nose and throat it is important to know the type of growth and the life history of the tumor. One case of adamantinoma recurred locally thirty-five years after operation. A patient with primary carcinoma of the glands of the neck remained well for five years. The best results will be obtained by the cooperation of the nose and throat surgeon with the radium therapist.

A CERTIFIED MILK BORNE PARATYPHOID OUTBREAK

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During a period of two months, from March 5 to May 8, 1924, there occurred an outbreak of acute gastro-enteritis among a group of about sixty infants and young children in New Rochelle, N. Y., and nine neighboring communities. There were no fatal cases in this outbreak. The New York State Department of Health was called on to assist in the investigation and suppression of the outbreak, which was found to be one of paratyphoid fever caused by a milker on a certified dairy farm, who was discovered to be an enteric carrier of *Bacillus paratyphosus* B.

SYMPTOMATOLOGY AND DIAGNOSIS

The investigation included fifty case histories, information for which was secured in each instance either from the family physician or from the parents.

Symptomatology.—The commonest symptom was diarrhea, and this occurred in forty-eight cases. It was severe in twenty-four cases, lasted from three to twenty-five days, and averaged seven days. It was moderate in twenty-four cases, in which the average duration was four and one-half days. The stools were green in forty-six cases, mucoid in forty-four cases, watery in forty cases, and bloody in twenty-four cases (with severe bleeding in six cases). Two patients reported no diarrhea. In one, there was marked constipation in a child who had abdominal "cramps," much distention, and large quantities of mucus in the stool. The other patient, a girl, aged 5 years, had a chill with fever, headache, delirium and abdominal pain. Her brother had an attack typical of the outbreak.

Fever was the next most frequent symptom noted and was reported in thirty-four cases, as follows: 100 F. or "slight fever" in nine cases, 101 in four cases, 102 in ten cases, 103 in six cases, 104 in two cases and 105 in three cases.

Abdominal pain was present in nineteen cases, in two of which it was designated as "cramps." Vomiting was present in thirteen cases, and a chill was reported in four instances. An eruption on the face or body was noted in seven cases. As a rule, it was a fine water blister type of rash, of moderate extent. In one patient, it appeared over the entire body after the third day of illness; in another, two days after the onset, and in still another, on the face, on the third day of illness. One family reported that the eruption appeared before the diarrhea began. No rose spots were recorded.

The duration of illness was stated to have been as follows: one day, one case; two days, two cases; four days, four cases; five days, two cases; seven days, twenty-one cases; ten days, ten cases; twelve days, one case; two weeks, six cases, and one case each for two and one-half, three and four weeks. The average duration was eight and one-half days.

Recurrent attacks occurred in three instances, each of which was in a child, aged 6 months, and two of which patients subsequently gave a partial Widal reaction for *Bacillus paratyphosus* B. In one case, the first and second attacks lasted six days and a week, respectively, with an interval of a month. This child gave a partial Widal reaction, May 26. In another case, the two attacks lasted ten days and two days, respectively, with an interval of a month between. In this child, there was a body eruption with each attack, and a sister whose age is not recorded suffered from a "stomach ache," which was attributed to the use of the certified milk in question. The third child with recurrence had its first onset, April 21, and the subsequent onset, May 3. There was a rash on the face, May 12, and this patient was one who gave a partial Widal reaction for *Bacillus paratyphosus* B, May 26, and again, June 2.

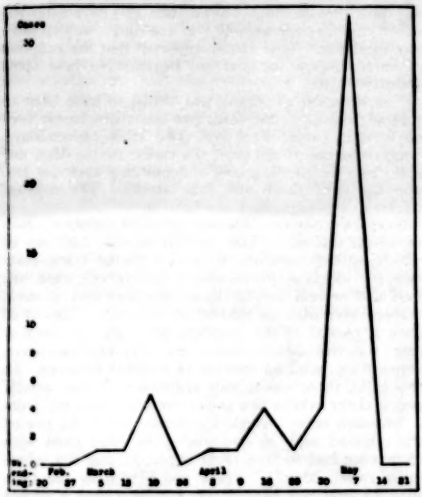
The last raw certified milk was sold by the suspected dairy, May 7, and the last patient known to become sick in the outbreak was a child, aged 13 months, who drank the certified milk, May 7, as she had done daily for more than a year. The illness of this child is described because I observed it and it was characteristic of many other mild cases in the outbreak. At 2 a. m., May 8, the child awoke crying, with a high fever and sweating. Seven hours later diarrhea began, and the stools were frequent, loose, mucoid and green all that day. That evening, the family physician found bloody flakes in the stool. He discontinued all milk for eighteen hours, and then substituted Grade A boiled milk, with a resulting uneventful convalescence.

Diagnosis.—A loose, yellow stool, obtained from this child, May 10, gave the correct clue to the etiology of the entire outbreak. A portion of this stool was sent to the state laboratory at Albany in a tube containing

glycerin, the usual fecal container supplied by the laboratory. *Bacillus paratyphosus* B organisms were isolated in large quantities from this specimen. The laboratory report, together with Osler's dictum concerning paratyphoid infection, that "many cases have a very brief but acute course, resembling food poisoning," led to other fecal and Widal examinations. Three of the convalescent patients, among those whose stools were examined, gave positive fecal reports for *Bacillus paratyphosus* B. In addition, two other convalescent patients gave positive Widal tests for *Bacillus paratyphosus* B, and four additional children gave partial Widal reactions for this organism. One in the last group was one of the three convalescent children who had given a paratyphoid stool culture.

EPIDEMIOLOGY

At the time of the investigation, there was little doubt that the outbreak had been caused by certified milk produced and sold by a single dairy. The problem



Occurrence of cases; the sale of raw certified milk was discontinued, May 7.

was to determine the source of infection and to eliminate it. Each patient was known to have used the milk in question; there were no similar cases occurring at the time among persons using any other milk. That the epidemic was not water-borne was shown by the fact that the geographic distribution of the cases represented an area served by a number of separate water supplies. Aside from the milk, there was no vehicle of infection common to all the cases.

Early in the investigation, attention was called to the presence of an acute mastitis in one of the cows supplying the suspected milk. *Streptococcus hemolyticus* had been isolated from the udder of this cow, and, until the presence of paratyphoid organisms was recognized in one of the clinical cases, the streptococci were suspected of being the causative agent of the outbreak.

When the first laboratory report indicated that one clinical case was a paratyphoid infection, fecal specimens were sent to the state branch laboratory at New York City from all the employees at the dairy farm. This step had not been taken previously as a routine preventive measure. The laboratory test revealed that one of the milkers at the farm was a fecal carrier of *Bacillus paratyphosus* B; the fecal tests for all the other ten persons at work on the farm were reported negative. *Bacillus paratyphosus* B organisms were also isolated from a stool taken at the same time from the carrier's small child, who had had a characteristic diarrheal attack during the time of the outbreak.

The experience reported by a Mount Vernon physician is worthy of note. In December, 1923, he had six cases similar to those in the New Rochelle outbreak of 1924. Although the dates of onset of these six cases were not recorded, it was stated at the dairy that this milker was first employed by them, Dec. 6, 1923, and from that date until May 26, 1924. The only milk which these Mount Vernon children had used was this same certified milk, and in December, 1923, they had suffered with diarrhea, vomiting and bloody stools. Since January, 1924, the physician had advised the parents to boil the certified milk three minutes, with the result that during the spring outbreak none of his families who used the milk suffered, except one baby girl who was ill, May 6, and in this instance the family had omitted to boil the milk as directed by the physician. The experience of the Mount Vernon physician leads us to suspect that the carrier had on this previous occasion been the source of an infection which had been, in all probability, spread by the same milk, and that he was discharging infectious material intermittently.

Dates of Onset.—The fifty cases studied gave dates of onset from March 5 to May 7, as follows: March 5, 6, 15, one case each; March 17 and 18, two cases each; March 29, April 6, 11, 12, one case each; April 16, two cases; April 21, 26, 27, one case each; and then: April 29, two cases; May 2, nine cases; May 3, eleven cases; May 4, six cases; May 5, four cases, and May 6 and 7, one case each. The dates of onset are indicated on the accompanying chart. The onset of further cases was checked abruptly, May 7, which was the last day that the certified milk was sold raw.

Geographic Distribution.—The fifty cases gave the following geographic distribution: New Rochelle, twenty-three cases; Larchmont, seven cases; Pelham Manor, six cases; Mount Vernon, five cases; North Pelham, three cases; Mamaroneck, two cases, and Tuckahoe, Bronxville, Pelham, and Pelham Heights, one case each. The usual distribution of certified milk from the dairy in question, amounting to about 864 quarts daily, with the number of families receiving this certified milk in each locality, is as follows: New Rochelle, 216; Mount Vernon, 177; the Pelhams, eighty-three; Larchmont, seventy-two; Bronxville, seventy-two; Yonkers, thirty; New York City, seventeen; Tuckahoe, twelve, and Mamaroneck, nine. It is of interest to note that the first two patients to become infected, who were children in one family, were in Larchmont, and that a period of nine days elapsed before there were further cases in the outbreak. There then occurred five cases in New Rochelle over a period of four days; and it was subsequently eleven days before the onset of the next case, which occurred in Pelham Manor. Eight days then elapsed before the onset of another case in New Rochelle. From that time (April 6) until early in May, the cases gradually grew more frequent and were more widely distributed.

Age and Sex.—There were twenty-seven males and twenty-three females in the group studied. The youngest patient in any case recorded was 3 months old. Forty-nine of the fifty patients were under 6 years of age. The remaining patient was 40 years old, and was a sufferer from gastric ulcer who was on a special diet which included the certified milk in question. The age grouping of the fifty patients is given in the accompanying table.

There is, I believe, no significance in this age grouping of the cases. It merely represents those ages when certified milk is considered of value as a food.

Unusual Cases.—The adult patient referred to, who suffered from a gastric ulcer, was one of the few known adult users of this certified milk. His attack was quite similar to those of his two children, aged 18 months and 3½ years. The cook in this family, who had used certified milk on her cereal, gave a history of "not feeling well at her stomach," but she had had no vomiting or diarrhea. In addition, the father of another 2 year old patient reported that he used certified milk and suffered from a "slight diarrhea" for three days at the time of the outbreak. The 4 year old sister of another patient was reported as having had a fever of 100 F. for one day, without diarrhea. This was the day before the raw certified milk was withdrawn from sale. In one case, in which a 4½ year old boy was suffering, the family cat had been given a small amount of the certified milk, and within three hours the cat had a violent diarrhea, according to the history given by the family. In three families in which there were cases, well members of the household had consumed this certified milk without developing any symptoms. In one, it was the mother, and in two other families a sister of the person affected.

Age Grouping of Paratyphoid Patients

Age	Number of Cases
Under 6 months	4
From 6 months to 1 year	17
1 year	17
2 years	6
3 years	2
4 years	2
5 years	1
40 years	1
Total cases	50

Epidemics of infectious disease spread by certified milk are extremely rare. Apart from the one here described, I have been able to find only one authentic certified milk borne outbreak since 1892, when, through the efforts of Dr. Henry L. Coit of Newark, N. J., the production and sale of certified milk had its inception. This excellent record is a great tribute to the medical milk commissions and to the producers of certified milk, and is a witness to their unremitting efforts to put on sale as safe a raw milk as is possible.

Records on file in the New York State Department of Health show that in February and March, 1920, there occurred a diphtheria outbreak in Westchester County, N. Y., which was spread by certified milk produced on a dairy farm located in the township of Harrison. There were in all about thirty cases, in Port Chester, Rye, Harrison and White Plains, with five deaths.

It may be of interest to refer briefly to a series of paratyphoid infections due to a carrier who contaminated a noncertified milk supply. Linnell,[1] in describing this group of fourteen cases in England between August, 1918, and September, 1919, gives good epidemiologic evidence that the carrier was of the intermittent type. Similarly, it is my opinion that the carrier responsible for the New Rochelle outbreak may also have been an intermittent one, because of the apparently nondischarging interval between December, 1923, and March, 1924. This interval is also evidence that the carrier was more probably the cause than the effect of the 1924 outbreak. In this connection, attention is called to two articles by Krumwiede on certain aspects of the carrier problem. In an interesting report of a milk borne typhoid outbreak in Morristown, N. J., Bolduan and Krumwiede[2] show that great care is necessary in interpreting the presence of a carrier on a dairy farm. In this case, two typhoid carriers were discovered, and repeated tests were required before it was shown that one had been the cause and the other a result of the outbreak. Again, Krumwiede[3] reports some valuable figures on paratyphoid carriers found in a regiment returning home from the Mexican border, in 1916, after having been exposed to paratyphoid infection. Four per cent. of these carriers are shown to have given no history of a previous illness. The paratyphoid carrier causing the New Rochelle outbreak, in like manner, gave no history of a previous illness. It should be noted, finally, that, May, 26, he left the dairy farm and sought employment as a truck driver across the state line in Connecticut, where he ceased to be of danger as a food or milk handler.

SUMMARY

During March, April and May, 1924, there occurred an outbreak of paratyphoid fever among a group of about sixty infants and young children in New Rochelle, N. Y., and nine neighboring communities. There were no fatal cases. During the preceding December there had occurred in the nearby city of Mount Vernon a small group of cases of similar clinical nature.

2. The characteristic symptoms of the outbreak were: a green, mucoid, blood-tinged diarrhea, with fever, abdominal pain, and occasionally vomiting.

3. The clue to the correct etiology of the outbreak was the isolation of *Bacillus paratyphosus* B from the stool of one of the children during convalescence.

4. The diagnosis of the clue case was followed by isolating the paratyphoid organism from three other convalescent children. In addition, there were two cases giving positive Widal reactions and four other cases giving partial Widal reactions with *Bacillus paratyphosus* B.

5. There was no common vehicle of infection other than the certified milk that had been consumed in all the cases.

6. The outbreak was caused by an enteric carrier of *Bacillus paratyphosus* B, who was a milker employed at the dairy farm producing the milk in question. The etiologic organism was isolated from the stool of this carrier and also from the stool of his 4 year old child.

7. Only one previous outbreak of infectious disease spread by certified milk is known to me. This was a diphtheria outbreak that occurred in Westchester County, N. Y., in 1920.

335 State Street.

1. Linnell, J. E.: A Series of Fourteen Cases of Paratyphoid Fever "B" Traced to a Carrier, Pub. Health 34: 172 (June) 1921.

2. Bolduan, C. F., and Krumwiede, Charles, Jr.: A Milk-Borne Outbreak of Typhoid Fever, Pub. Health Rep. 32: 1755 (Oct. 19) 1917.

3. Krumwiede, Charles, Jr.: Fecal Examinations of a Regiment Infected with Bacillus Paratyphosus A, with Special Reference to Normal Carriers, J. Infect. Dis. 21: 141 (Aug.) 1917.

DENTAL INFECTIONS AND RELATED DEGENERATIVE DISEASES

SOME STRUCTURAL AND BIOCHEMICAL FACTORS *

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The relationships between dental infections and degenerative diseases, if such exist, should be demonstrable by other means than the establishment of simply an association of the two in the same person, or the development of such lesions in experimental animals with cultures taken from focal infections. In this paper I summarize some new data developed in my researches on the relation of focal infection to systemic disease, with particular consideration of dental focal infections and the degenerative diseases, and with especial reference to structural changes that take place in the supporting structures about dental focal infections, and to serologic changes in body serums.

In a previous communication [1] I have given a preliminary report, indicating that patients can be divided into three groups on the basis of the type of structural change that develops in the supporting structures of infected teeth, as the result of the presence of a given type of dental infection, as, for example, that quantity of infection that would be present in a single-rooted tooth with a putrescent pulp, in which there is infection of the dentin plus infection of the degenerated pulp tissue.

TABLE 1.—*Relation of Periodontoclasia to Susceptibility to Rheumatic Group Lesions (Fifteen Typical Families in Each Group)*

Susceptibility	No. of Lesions per Group: Severe	No. of Lesions per Group: Severe and Mild	Per Cent. Caries	Per Cent. Periodontoclasia
Absent	16	31	40	40
Acquired	63	96	80	30
Inherited:				
One side mild	144	261	67	33
Two sides mild	227	308	95	33
One side strong	276	336	80	20
Two sides strong	481	754	95	0

In some individuals this condition will produce a large zone of rarefaction about the apex of the tooth, which will frequently be connected with the external surface by a fistula. The medullary structure of the surrounding bone opens quite readily into the periapical chamber, the trabeculae in the surrounding osseous tissue are approximately normal in size for the age of that patient, and the ratio or proportion of medullary material to osseous tissue is as much as, or is more than, 50 per cent. of the total mass.

In a second group we find a condition that appears very similar to the former except that the fistula tends to be closed and the zone of rarefaction is surrounded by a zone of condensed bone, with a marked reduction in the proportion of medullary tissue and an increase in the osseous tissue immediately adjoining the chamber that has been formed in the bone about the apex of the infected tooth. The thickness of this zone of condensed bone varies in proportion to a time factor, as we shall see.

In a third group we find that this type and quantity of dental infection produces much less of a zone of rarefaction about the apex of the involved tooth, in some cases amounting to a very slight absorption as compared with the previous cases. The trabeculae are not so pronounced in the alveolar bone, and there is evidence of more or less diffuse condensation surrounding the area.

These three general types will frequently be encountered in this clear cut form. However, there will be gradations between them, which will make a differentiation between either the first or the second, or the second and third of these groups, difficult. In other words, we seem to be dealing with a combination of influences. This is illustrated in Figure 1, which shows a group of teeth with putrescent canals showing characteristic lesions of these types. I [2] have already discussed this and illustrated it in extensive detail.

RESISTANCE AND SUSCEPTIBILITY TO RHEUMATIC DISTURBANCES

I have made an intensive study of the resistance and susceptibility factor in individuals with regard to the matter of their developing, during their lifetime, certain of the rheumatic group diseases or affections, and a preliminary report of this study has been presented.[3] In the rheumatic group disturbances I have included those affections which are very frequently caused by, or associated with, streptococcal invasions associated with degenerative processes in organs and tissues, the chief of which we have included in groups, such as muscles and joints, heart, kidneys, digestive tract, nervous system, and special tissues. In these studies I have undertaken to get the history of the serious breaks in these groupings in the following individuals: the patient being studied, the brothers and sisters of the patient, the father and mother of the patient, the brothers and sisters of the father and mother, and the four grandparents. To secure this information has required a great deal of painstaking effort, and, because in many cases it was not possible to get in contact with reliable sources of information, such as family physicians, I have eliminated approximately 50 per cent. of the records as being inadequate.

By using 673 cases out of approximately 1,400 and comparing the data secured from this number with those secured from an earlier group of 250 cases, we find that there is a remarkable conformity in the two sets of studies. In general, it has been found, as I have shown, that patients may again be divided into three groups on the basis of the probable presence or absence in their lifetime of serious involvements of the so-called rheumatic group lesions. These groupings are as follows: First, those persons who during their lifetime have had so high a defense or have been so free from adequate causes that they have not developed any of this group of lesions, nor have the members of their families. Second, a group very similar to the first one, except that while the persons in it have been free during the major part of their lifetime, they have had a recent break in the form of some of these disturbances. Third, those patients who have had frequent and recurring expressions of one or several of these rheumatic group disturbances throughout their lifetime, which history is more or less duplicated in various of the members of the family. I have chosen to call these groups (1) absent susceptibility, (2) acquired susceptibility, and (3) inherited susceptibility.

* Read before the Section on Stomatology at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the author's reprints. A copy of the latter will be sent by the author on receipt of a stamped addressed envelop.

1. Price, W. A.: Volume I, Dental Infections, Oral and Systemic, Volume II, Dental Infections and the Degenerative Diseases, Cleveland, Penton Publishing Company.

2. Price, W. A.: Dental Infections, Chapter III.

3. Price, W. A.: Dental Infections, Chapter IV.

An analysis of the individuals constituting the members of each of these groups proves to correspond with the groupings made on the basis of differences in structural pathology, the association being as follows: Group 1, absent susceptibility, proves to have the same individuals in it as does the grouping made on the basis of structural pathology as having extensive zones of rarefaction for a given dental infection. The individuals of the group termed acquired susceptibility prove to be in general the same individuals who were in Group 2 of the other method, and are frequently, if not generally, those showing a zone of condensing osteitis around the zones of rarefying osteitis; and Group 3, those with an inherited susceptibility, prove to be the individuals with the generally lesser amount of radiolucence and cavitation about the apex of an infected tooth, with a marked tendency to fusion and obliteration of trabeculae and marked lessening of the medullary matter in the bone about infected teeth. The evidence in support of these data is now so abundant as to seem to establish without question the association of these structural and clinical phenomena.

When we take fifteen families as being typical of each of these different groups, and then divide the last group—namely, those with an inherited susceptibility—into four groupings (one side mild, two sides mild, one side strong, two sides strong) and use fifteen families for each, we are able to make important observations which suggest elements that are involved factors, if not the fundamental causes, of some of these phenomena. This is illustrated in Table 1, in which the column headed "Susceptibility" shows the different classifications as suggested, and the section headed "Number of Lesions Per Group" shows the incidence of the rheumatic group disturbances; it will be noted that the total number of severe rheumatic group lesions (by severe I mean those that have either incapacitated or caused death) is progressively greater as the inheritance of the susceptibility increases in intensity. There is not opportunity in this text, since this is introductory, to review in detail those data which have previously been reported.

These data immediately suggest the answer to the paradox that has produced probably more of the difference of opinion than any, if not all, other factors combined: namely, why it is, in our general clinics, that those patients who apparently have the most dental infection in their mouths, as judged by flowing pus from fistulas and number of broken down and abscessing roots or suppurating pyorrhea pockets, generally present themselves without a history of the rheumatic group disturbances, as they appear in general or accident clinics; and, conversely, why it is that the patients who do show severe or frequent breaks with the rheumatic group disturbances are so often those who have very little evidence of oral suppurative, infective processes. Whereas in the former group there is a history of recurring tenderness of the teeth to make certain that the teeth are infected, in the latter group there is usually little or no history of such inflammatory reactions or painful disturbances.

RELATION OF CARIES AND PERIODONTOCLASIA

The application of these new principles constitutes a new basis for practice, as I have indicated in the previous report. I am limiting this discussion to the significance and nature of some of the structural and biochemical changes that are associated with these phenomena.

In the column headed "Per Cent. Periodontoclasia" (Table 1), I have shown the incidence of periodontoclasia, or so-called pyorrhea alveolaris, and find (and this was a great surprise although it has been abundantly verified) that as the tendency to caries increases, not only does the tendency to periodontoclasia decrease, but the periodontoclasia tends to decrease as the intensity of the inheritance of susceptibility for the rheumatic group lesions increases. This has profound importance, since it immediately indicates that the phenomena of structural change, whether at the apex of a tooth or at a gingival margin (for in every case in which we find extensive periodontoclasia our unit quantity of dental infection will always produce a large zone of rarefaction) are related through their causative factors, either directly or indirectly, with the forces of defense and resistance. This has led to an effort to analyze the involved forces and relate them to these phenomena.

TABLE 2.—*Dominance of Special Tissue Lesion in Both Patients and Families (Ten)*

Group	No. of Males	No. of Females	Number of Lesions in Ten Patients: Tonsils	Rheumatism	Heart	Neck	Nerves	Internal Organs	Special Tissues	Number of Lesions in Families: Tonsils	Rheumatism	Heart	Neck	Nerves	Internal Organs	Special Tissues	Total: Severe	Severe and Mild	Local Expressions of Dental Infections: Caries	Periodontoclasia	Open	Locked	Rarefying	Condensing
Rheumatism	8	8	8	10	8	6	8	4	5	80	80	87	9	10	10	10	102	121	9	1	1	6	8	8
Heart	8	7	7	6	10	5	7	4	5	72	72	90	9	10	10	10	111	138	10	1	1	6	8	8
Nerves	8	8	6	4	9	7	10	4	7	60	60	90	9	10	10	10	109	138	10	1	1	7	8	8
Internal organs	7	8	6	4	9	6	9	10	6	60	60	90	9	10	10	10	109	170	7	1	1	7	4	3

HEREDITY

These studies have thrown an important light on some of the factors that are involved in the relation of heredity to the type of disturbance from which the patient suffers. In Table 2 I have arranged a group of the relatives of each of ten patients in such a way as to show the number of instances in all the members of the ten families (approximately sixteen relatives of each patient) in which there have appeared rheumatism and disturbances in the tonsils, heart, neck, nerves, internal organs, and special tissues. In all, forty patients were selected, ten of whom were suffering from rheumatism, ten from heart involvement, ten from nervous system disturbance, and ten from disturbance of internal organs. While the patient might be influenced by the health of the parents and grandparents, the latter, with the brothers and sisters of the father and mother and the brothers and sisters of the patient, could not be influenced by the patient.

CHANGES IN THE BLOOD

We naturally look to the blood as being one of the earliest disturbed tissues, and as it is studied in large measure to determine the presence or absence of infec-

tion by its hematologic, serologic and bacteriologic changes, we have undertaken to compare these. In general, we find that chronic dental infections do not produce the blood picture of acute infections. Instead of there being a marked leukocytosis, there is frequently a marked leukopenia. The polymorphonuclears, instead of being increased, tend to be decreased in percentage, and the lymphocytes increased. When, however, a dental infection is producing an acute reaction, as an acute abscess, it then produces the marked leukocytosis and increase of polymorphonuclears. This is particularly true of the persons in Group 1, and these patients tend to develop a marked rise in temperature, and extensive swelling, severe pain and physical depression, usually terminating in rupture of the abscess from its pressure, and rapid fall of fever and return to normal. In those with low defense, this process is much less acute, and most frequently absent. The condition tends to take on a chronic state with slight tenderness or no local tenderness, and a tendency to the development of subnormal temperature.

When nonvirulent green-producing streptococci, under which grouping approximately 99 per cent. of the strains taken from chronically infected teeeth will classify, generally spoken of as *Streptococcus viridans*, are inoculated into the marginal ear vein of rabbits, or when an infected tooth is placed beneath the skin of a rabbit, we frequently do not get the acute inflammatory reactions that we do from many other types, such as hemolyzing strains. There is often at first a slight rise in polymorphonuclears, and then a general depression of this cell, with a marked increase in both the actual number as well as the percentage of lymphocytes.

In our study of the chemical changes in the blood of rabbits and patients we have included sugar, nonprotein nitrogen, urid acid, urea, ionic calcium, pathologically combined calcium, ionic calcium plus pathologically combined calcium, total calcium of all forms, and alkalinity index. These have been run as a routine, and other elements have been made subject of special studies. Of these various factors, two that we have found to be of particular importance in connection with dental infections are the ionic calcium of the blood and the alkalinity index. Since the pathologically combined calcium plus the ionic frequently makes a total calcium up to or above normal, the determination of the total calcium is very inadequate and of much less value as an expression of the picture than is the ionic calcium.

When we relate ionic calcium to the three fundamental groups of patients, as I have classified them, we find a very striking difference which doubtless has great significance. In the group with an absent susceptibility, the ionic calcium is usually normal to high, with a range from 10.5 to 12 mg. per hundred cubic centimeters; in the group with an acquired susceptibility, usually from 9.5 to 11, and in the group with the strongly inherited susceptibility, already breaking, usually from 7 to 10.

Of several methods that we have used for studying the effect of the type of culture which we have found in infected teeth on experimental animals, one that has been very instructive has been the placing of freshly extracted infected teeth beneath the skins of animals for the study of the changes in the blood picture. Few, if any, of these changes have been more striking and regular than the depression of the ionic calcium in all cases in which the animal was being seriously affected by the presence of the tooth. In practically every instance, when the infected tooth is so placed under the skin of an animal, if the animal does not become seriously injured by the presence of the tooth, it builds about it a fibrous capsule, highly vascularized, which for a time at least apparently quite successfully protects the animal from the toxic products of the bacteria and from the invasion of the animal by the organisms of the tooth.

In every instance in which an animal does not build such a membrane, and that promptly, it tends to lose in weight, there is a formation of an abscess, more or less pronounced, and there are very important and quite uniform changes in the blood picture, followed by death. One of the most important of these is the progressive depression of the polymorphonuclears and progressive increase of the small lymphocytes, which process is quite regularly paralleled and accompanied by a depression of the ionic calcium of the blood.

Another very striking phenomenon is the effect of placing some pieces of patients' infected teeth into some of the serum of that patient's blood for from twenty minutes to a half hour. This often produces a very marked reduction in the ionic calcium of that blood serum, with a marked increase of the pathologically combined calcium. In Table 7, a group of blood samples from patients so tested with their own teeth are shown, in which the total decrease in ionic calcium has been from 10 to 76 per cent., and the total increase in pathologically combined calcium from 15 to 83 per cent.

The methods used for making our calcium determinations have been chiefly those suggested by West [4] and Vines.[5]

Human beings, as they come under observation, have very great difference with regard to the capacity of their blood, both plasma and whole blood, to destroy serophytic micro-organisms, which are chiefly streptococci and staphylococci. This is well illustrated by the method of Wright [6] for testing the bactericidal property of the blood. In Figure 2 will be seen tests made from the bloods of two patients seen within an hour of each other, one with an exceedingly high defense, the other with a very low defense. *A* shows control cultures,

TABLE 5.—*Comparison of Changes in Ionic Calcium and Blood Morphology Due to Culture Inoculations*

Date, 1923	Hemoglobin	Erythrocytes	Leukocytes	Polymorphonuclears	Lymphocytes		Basophils	Arneth Index	Calcium and Thrombin	Calcium Ionic	Calcium, Ionic and Combined	Calcium in Combination
					Large	Small						
6/1*	85	6,000,000	15,000	87.0	7.0	34.0	2.0	83	15.20	11.80	12.60	1.47
6/2	85	6,150,000	27,700	70.1	14.4	15.4	...	46	17.20	11.80	13.22	1.42
6/4	90	5,750,000	10,000	33.0	8.0	32.2	2.4	..	15.60	8.40	12.62	4.21
6/5	90	5,800,000	34,600	94.7	16.0	17.9	...	..	17.60	8.40	8.71	0.25
6/6	85	5,100,000	14,200	31.2	6.4	62.4	...	..	17.40	8.85	9.80	1.75

* Before inoculation.

4. West, Fred: A New Method for the Determination of Calcium and Thrombin in Serum, J. A. M. A. 78:1042 (April 8) 1922.
5. Vines, H. W. C.: Coagulation of Blood, I, Rôle of Calcium, J. Physiol. 55:86 (May) 1921; II, Clotting Complex, ibid. 56:267 (Aug.) 1921.
6. Wright, A. E.; Colebrook, L., and Storer, E. J.: Therapeutic Inoculation, Lancet 1:365-373 (Feb. 24), 417-420 (March 3), 473-478 (March 10) 1923; Ann. de l'Inst. Pasteur 37:107-182 (Feb.) 1923.

approximately 1,000 streptococci placed in Petri dishes, and their profuse growth is noted. *B* shows the result of taking a similar quantity—namely, 1,000—of this strain of streptococci, and placing them for ten minutes in 0.3 c.c. of the patient's blood, after which they were transferred to similar Petri dishes, and except for the effect of the blood, should show the same growth as in *A*. The cultures on the left are from a girl, aged 15 years, suffering from a partial nervous breakdown and heart involvement, probably contributed to by the overload of strenuous college. The cultures on the right are from a man, aged 56, with extensive periodontoclasia (pyorrhea) with much suppuration, never sick a day in his life. It will be noted that with this test, as shown in *B*, this man killed off a very large proportion of the streptococci, and the girl a little more than half.

But the plasma of the circulating blood does not contain all the available defensive properties that it may, if the individual is suffering from an invasion. Therefore, the placing of some dead organisms in the blood (in this case 100 for twenty minutes), to call out from the leukocytes additional defensive factors, resulted in inducing the blood of the man to kill off practically all the organisms, whereas, when this was done with the blood of the girl, the defensive mechanism not only did not kill off as many as before the dead organisms were introduced, as shown in *B*, but the blood was very much less efficient, suggesting that an additional overload had been provided. Similarly, when 1,000 dead organisms were added to this quantity of blood (0.3 c.c.) for twenty minutes, prior to the adding of 100 live organisms, the blood of the man, with its high defense, was not only able to devitalize practically all the live organisms in ten minutes, but could do that in the presence of so large a quantity of toxic material as was added with the 1,000 dead organisms. The blood of the girl, however, was not so efficient as with either 100 dead organisms or with no dead organisms. For her blood, it seems that there had been simply the addition of supplemental toxic material. She, apparently, was already utilizing all her available reserve forces for fighting this infection. With the removal of the dental infections, one of which was a badly infected first permanent molar, which, incidentally, showed very little rarefaction roentgenographically and had not been in the least tender, she gained 15 pounds (7 kg.). The acute heart irritation disappeared, as did also the nervous symptoms, and she returned to practically normal health. By inheritance she had a marked susceptibility for heart and nervous system.

IMMUNITY VERSUS SUSCEPTIBILITY

One of the most important values of these new data is the light they throw on some of those fundamental forces which are at work in determining not only the local and systemic expressions of disease but also the nature of some of the factors involved in immunity and defense, in contrast with susceptibility. I have previously shown data demonstrating that individuals with a tendency to tearing down of bone, whether at the necks of teeth or at the apexes, tend as a group to have a high defense against systemic involvements of streptococcal origin; in other words, they tend to be quite free from so-called rheumatic group, degenerative diseases. I have also stated that these individuals tend to have a higher ionic calcium content of the blood than do persons with a mild or marked susceptibility to rheumatic group disturbances, where they are suffering from such; and these factors obtain in the presence of even considerable dental infection, and that dental infection tends in all individuals to depress the ionic calcium, but in proportion to the factor of lack of ability to maintain the body without systemic involvements. When, therefore, individuals are studied on the basis of the significance of the type of reaction in bone about such infections as dental infections, very important light is thrown on the types of disease which tend to develop in individuals in accordance with this factor of the development of rarefaction on the one hand, or its absence, and a tendency to condensation of involved calcified structures. This is graphically brought out in Table 9, in which are arranged the various disturbances and types of disease on the basis of the factor of whether bone will go into solution or be deposited.

TABLE 7.—*Blood Calcium Changes Produced by Infected Teeth*

Case No.	Calcium			Tooth Placed in Serum			Decrease in Ionic		Total in Pathologic Combination	
	Ionic	Ionic and Combined	Pathologically Combined	Ionic	Ionic and Combined	Pathologically Combined	Actual	Per Cent.	Actual	Per Cent.
10	0.80	10.36	0.72	0.85	0.39	0.63	−0.91	−10	−1.69	16
11	0.80	10.13	0.94	0.80	.....	.....	−1.20	−12	1.47	15
9	11.904	15.69	3.486	12.72	13.44	0.708	+0.826	+ 7	+2.69	17
7	11.920	11.920	.....	0.81	0.16	.....	−0.81	−20	−3.41	29
12	0.80	9.60	0.60	0.84	12.50	4.04	−0.82	− 8	−1.12	12
13	11.892	13.334	1.382	7.350	11.892	4.544	−4.504	−38	−5.076	38
14	0.10	9.53	1.43	0.85	6.13	2.69	−2.69	−28	−3.91	37
15	5.25	7.50	2.25	1.25	.....	.....	−4.00	−76	−6.25	83

Under the caption, Type of Local Reaction in Bone, I refer to the structural change in the alveolar bone about infected pulpless teeth and teeth with periodontoclasia or pyorrhea. I have divided these changes into three groups: first, rarefying osteitis with extensive decalcification; second, condensing osteitis about extensive rarefying osteitis; and third, condensing osteitis, or very slight rarefying osteitis, or both; and have related each of the following factors to these groupings: namely, susceptibility group (absent, acquired or inherited), blood ionic calcium (serum calcium), bactericidal efficiency of the blood for streptococci; and, finally, to all these I have related certain of the systemic disturbances or involvements, both streptococcal and nonstreptococcal.

There is doubtless a great significance in these associations of data, which, so far as I am aware, are largely new. Clinicians, particularly dental, have long observed that the mouths with active pyorrhea have little or no caries. We have not, however, associated these with particular types of systemic susceptibility. Patients with periodontoclasia or pyorrhea in an active stage seem always to develop large areas of cavitation and radiolucence about the apexes of infected pulpless teeth, typifying a good reaction to an irritant. These individuals tend to keep themselves free from rheumatic group disease involvements, such as arthritis, and hence class as absent susceptibility, have a normal or high ionic blood calcium, and have a high bactericidal effi-

ciency of the blood for streptococci, as well as for most other organisms. They do not develop the rheumatic group, degenerative diseases while in this state, but the persons who develop progressively fatal miliary pulmonary tuberculosis are largely in this group, as are also those who develop cancer. This is easily verified in many ways. For example, how often have any of us seen patients with deforming proliferative arthritis develop either tuberculosis or cancer? It should also be noted how constantly cancer patients are free from the recurring rheumatic group symptoms and how frequently, if not almost constantly, they report that they have never been sick a day before in their lives.

In the second general grouping, namely, condensing osteitis about extensive rarefying osteitis, we find the persons who formerly had a high defense but have lost it as the result of infection and physical overloads. They are therefore in the acquired susceptibility group. Their blood calcium is usually below their normal, as is also the bactericidal efficiency of their blood. Previously, while in the preceding group, they had little or no caries, but now they have it in active form. Their systemic breaks tend to appear in the nervous system. One type of arthritis, the degenerative, which is associated with a normal or above normal ionic calcium content of the blood, may develop, but not the proliferative type. Since they tend to return to their normal, which is high, the prognosis for recovery from systemic involvements arising in streptococcal focal infections is good. This is the group which, according to our tabulation, we find developing the sensitizations, such as skin irritations, asthma, hypertrophic rhinitis, and hay-fever, all but the last coming frequently from the antigen of dental infections. The development of these phenomena seems to be related to the long continued presence of the antigen in an individual with normally a high defense or a high capacity for developing antibodies. The sensitizations frequently completely disappear with the elimination of the dental focal infection. There is evidence that many disturbances are fundamentally related to, or have involved in them, antigen-antibody reactions.

In the third group, we have as the typical local bone reaction about dental infections or irritations, apical or gingival, condensing osteitis or very slight rarefying osteitis. Since there is generally a familial phase, they are grouped as inherited susceptibility. The blood ionic calcium tends to have a low normal for the group, and when involved with some rheumatic group disturbances, to which such patients are easily subject, the blood calcium is often much reduced. The bactericidal efficiency of blood is low in such patients, and, when involved, often relatively very low. Their affections are very frequently of the streptococcal or so-called rheumatic group degenerative diseases, as diseases of the heart, kidney, or digestive tract, proliferative arthritis, acute rheumatism, and tonsillitis. They very seldom develop cancer or tuberculosis, and if they do develop the latter, prove to be the group in which is found the tendency to recover. In them, lung tubercles and glands tend to calcify; and, so far as this disease is concerned, this seems to suggest why so many persons who have tuberculosis recover, as shown by the results of postmortems. I have visited several sanatoriums for tuberculosis patients, looking for (among other data) cases of multiple deforming proliferative arthritis and tuberculosis associated, and have not yet found it. I will be glad to be informed of such cases. We might expect to find the other type—namely, the degenerative—which has a higher than normal ionic calcium, though it also is apparently a very rare association.

By the application of these principles to clinical observation, some interesting and instructive data have been accumulated, and there is evidence that a proper application of this newly observed principle and its relationship may have important prognostic value in the study of cases of tuberculosis, for it seems demonstrated that those patients who produce a calcification process as a reaction about their zone of rarefaction at the apex of an infected root are the same individuals who experience a remission and healing process in the course of an active tuberculous infection, presumably because of the presence of calcification in the fibrosis about the zones of pulmonary tuberculous infection. This is also a condition reported by pathologists to be present in the lungs of those individuals who have apparently had no history of tuberculosis, but, from the presence of calcified tubercles, have apparently had the infection and have recovered from it by maintaining a zone of calcification, or as a process that is incidentally accompanying the spontaneous recovery.

Table 9.—*Relation of Calcification and Decalcification to Type of Systemic Disease*

Type of Local Reaction in Bone	Susceptibility Group	Blood Ionic Calcium	Bactericidal Efficiency of Blood for Streptococci	Systemic Disturbances, Streptococcal and Nonstreptococcal: Heart	Proliferative Arthritis	Acute Rheumatism	Cystic	Kidneys	Stroke	Nervous Breakdown	Degenerative Arthritis	Neuritis	Skin Sensitization	Hypertrophic Rhinitis	Asthma	Periodontoclasis (Pyorrhea)	Hay-Fever	Extensive Salivary Calculus	Diabetes	Tuberculosis	Cancer
Rarefying osteitis, with extensive decalcification	Absent	Normal or high	High	..	..	..	..	..	..	..	..	..	..	..	..	•	•	•	•	•	..
Condensing osteitis about extensive rarefying osteitis	Acquired	High or subnormal for individual	Subnormal	..	..	..	•	•	•	•	•	•	•	•	•	•	•	•	•	..	..
Condensing osteitis, or very slight rarefying osteitis, or both	Inherited	Subnormal or low	Low	•	•	•	•	•	•	•	..	..	..	..	..	..	..	..	..	..	..

SUMMARY

I might briefly summarize here my interpretation of these local phenomena and their relation to the systemic defense. When a person has a normally high defense, as expressed by absence of recurring rheumatic group lesions, he or she tends to make the warfare against the organisms and toxic materials coming from the openings at the apexes of the involved teeth as close to the source of that infection as possible. This seems to be a principal reason why these patients have the large zones of rarefaction. This large zone of radiolucence is generally occupied in these individuals by a highly vascularized, defensive tissue, whose function

appears to be chiefly that of a local quarantine station. When it is adequate and efficient, the balance of the body is protected. The production of the local warfare expresses itself as pus, which is eliminated usually through a fistula and contains exceedingly few, and often no, living organisms. It is apparently largely because these individuals can make a fight to a finish close by the source that the balance of the body is safe from injury from these disturbances. When, however, that patient with a normally high defense has an overload, such as influenza, pregnancy, grief, exposure or poor nutrition, he is unable to continue the maintenance of the adequate quarantine, the warfare is no longer a fight to a finish immediately about the tooth, and the organisms and their toxic products pass into the body, and that warfare, which should have been made in special tissues close to the source of the infection, must now be made in the various organs and tissues of the body. The local dental involvement now ceases to be uncomfortable because of the absence of a local warfare. The accumulating toxic and bacterial material produces general changes in the blood and in the defensive forces, and the final warfare may have to be made in various organs and tissues far from the source of invasion. Since the blood stream rapidly distributes these materials to these various structures, the final warfare must be made there, and that organ or tissue tends to break which has been most weakened by some of the overloads mentioned above, or by that other noncontrollable factor (so far as the individual is concerned), namely, his or her inherited susceptibility, which now proves to be a factor which relates to individual organs and tissues, and which apparently is the reason why heart disease, etc., runs in families.

Fig. 1.—Typical different types of dental apical pathologic changes: *A*, extensive absorption opening into medulla of bone; *B*, very little bone change about apex of putrescent tooth; *C*, apical rarefaction with beginning zone of condensation; *D*, apical rarefaction with extensive zone of condensation.

In those persons with a high defensive mechanism, the long continued presence of the antigenic substances of focal infections, such as chronically infected teeth, the evidence suggests, causes zones of irritation to develop as sensitization reactions, which are completely relieved by the removal of the focal infection when it is the source of the antigen, as it frequently is. There is much more than a suspicion that these factors have more than an association relation in the grouping of cancer development cases in that group with the high streptococcal defense.

Tuberculosis tends to be associated with decalcifying processes about dental infections and in patients without a previous tendency to dental caries. The prognosis in a case of tuberculosis is suggested by the presence of a zone of condensing osteitis about a zone (previously developed) of rarefaction.

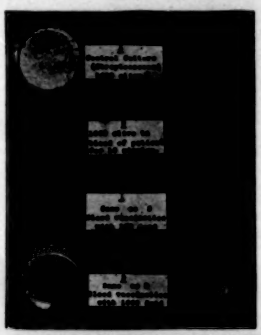

Fig. 2.—Bactericidal properties of bloods: at left, from girl with low defense with heart involvement; at right, from man with high defense, physically excellent.

May we not have here a new approach to the study of both the streptococcal, rheumatic group, degenerative diseases and the nonstreptococcal diseases, such as tuberculosis and cancer?

These new data furnish important suggestions, if not a preliminary basis, for diagnosis, prognosis and treatment, particularly for dental focal infections, and indicate the necessity for a greatly enlarged program of research on these fundamentals.

Calcium metabolism seems to play a most important rôle in both health and disease.

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ABSTRACT OF DISCUSSION

DR. CHARLES H. MAYO, Rochester, Minn.: It is now estimated that about 88 per cent. of all deaths, except those due to accidents, are the result of infection, microbic action, and it is barely possible that cancer will be added to the list of diseases caused by microbic life. We are now investigating the diseases of the individual. In the control of mass diseases we have done extremely well. It has been said that since 1870 the average length of man's life has been increased fifteen years by preventive medicine and the reduction of those fatal diseases that destroy through infections and contagions. We are just beginning to approach the problems in medicine in the manner in which the problems of agriculture have been approached for some time. We have learned that the growth of microbes resembles the growth of seed, and must have a soil adapted to it which may have to do with age, degeneration, inherited traits, and changes due to food. Thus, in the last five years we have paid more attention to dietetics than ever before, and have come to believe that there is a great deal of truth in the statement that a man often digs his grave with his teeth. The lesson from the injurious results of overfeeding or the wrong food, well recognized by farmers in raising animals, may well be applied with equal advantage to human beings. I should like to go on record as agreeing with the revived theory that certain kinds of bacteria have a nucleus, but no cytoplasm. Such bacteria use the soil, the fluids or tissues in which they live, as cytoplasm. With the newer knowledge of electrons, it is suggested that a part of the derangement of soil or function may be due to a deranged

electric potential. Such questions of the soil, as has been shown so beautifully by Dr. Price, by the action of calcium, are most important. Many believe it a simple matter to remove the focus of disease, and that there should be a positive result, even in cases in which there is essential destruction of tissues in the heart, kidneys and nervous system; and, in their opinion, the failures discredit the principle. I am sure that we have all come to the conclusion that it is not a simple matter to study focal infection, and to study

Fig. 3.—Zones of calcification in lung of treated tuberculous rabbit.

blood in its relation to calcium and other contents, as was shown by Dr. Price. Calcium is used in nature just as we use bromids, as a sedative and as a prevention of trauma. Within the next few years a study of calcium and other metals, and a study of the human soil will enable us to fight disease that is local to the individual, but not epidemic, contagious or infectious.

Dr. Arthur D. Black, Chicago: From the point of view of the dentist, we must divide our people into three groups for the study of focal infections in relation to systemic diseases. First, those who have lesions elsewhere in the body, which might result from mouth infections, and who have chronic infected areas in the mouth. Second, cases in which there may be demonstrable chronic lesions in the mouths of persons who are clinically well. About 78 per cent. of our adult population has demonstrable chronic infection about the teeth, and therefore may be classed in Groups 1 and 2. Third, persons who have no demonstrable chronic infections within the mouth. This group consists of adults and of children. The greatest opportunity and the highest responsibility of the dentist is in the prevention of these areas in the mouths of the generations to come, thus avoiding the necessity of extracting so many teeth to eliminate mouth infection. With the thought in mind that we are justified in treating the mouths of people who are clinically well along more conservative lines than we would persons who are sick, I wish to suggest: First, we should not extract all teeth from which pulps have been removed. A series of such cases, covering a period of thirty-three years, show no roentgenographic evidence of infection about the apexes of the roots of the teeth. Notwithstanding the statements frequently made that a high percentage of these cases are infected, I am not convinced that infection of so many years' standing would be harmful without showing demonstrable lesions in the bone. Secondly, recent studies by Dr. Edward H. Hatton of the research department of the Northwestern University Dental School have demonstrated that a percentage of those areas about the apexes of roots of teeth in which there is a demonstrable lesion may heal following treatment and filling of the root canal. We have believed that in every case in which the apex of the root of a tooth apparently projected into a cavity in the bone made by infection, the lesion was irreparable, because we have presumed that the peridental membrane had been destroyed, and that the cementum was necrosed. Dr. Hatton has demonstrated in a number of cases that there was a fibrous wall of granulation tissue attached at the apex of the root immediately about the apical foramen, and that, as the area gradually enlarged, spreading around the sides of the root, the granulation tissue had retained its attachment immediately about the apical foramen and had taken a form as though the apex of the root of the tooth had pressed one surface of a hollow rubber ball inward; and there was no destruction of the peridental membrane, nor of its attachment to the cementum; therefore, complete healing should take place following proper treatment. We cannot differentiate roentgenographically between this type of case and that in which the cementum has been denuded, but I believe that we may be justified, in the cases of persons who are well, and especially if they are young, in treating these cases as though this situation did exist, watching them carefully afterward. Thirdly, it is important that extensive studies be made of infected areas about the teeth of patients who are clinically well. Dr. Rosenow has found the same organisms in infected areas about the teeth and in the secondary lesions elsewhere in the body, and from cultures from both of those areas, the secondary lesion has been reproduced in animals. Many have considered this to be proof positive that the area about the apex of the tooth is the cause of the secondary lesion, which is not necessarily so, since the tooth area and the so-called secondary lesion may both be secondary to some other focus. Injections of animals from infected areas about the apexes of roots of teeth, when there was no secondary lesion in the individual, have not, as a rule, produced secondary lesions of consequence in the animals. This suggests the possibility that the infected area about the apex of the root is not as great an offender as we have thought, and that the real source of the secondary infection in many of these cases may be elsewhere.

Dr. Frederick B. Moorehead, Chicago: The implantation subdermally into a human being of extraneous material relatively as large as a human tooth implanted under the skin of a guinea-pig will produce a certain amount of surgical shock and a certain amount of protein shock; moreover, Dr. Price had no control in this experiment, as he does not know exactly the amount or the character of the substance introduced. The mere physical introduction of a body that size

Fig. 4.—Fibrosis and calcifications in lungs of patient with quiescent pulmonary tuberculosis.

would set up certain reactions which could not be evaluated in the terms indicated. We have here to deal with not only surgical shock but also protein shock. It is well known that globulin found in hemoglobin will produce marked reactions when introduced into the circulation, frequently setting up a marked albuminuria. Dr. Price has not discussed the question of permeability. It is well known that the endothelial cell varies greatly in its permeability; at times, large quantities of salts may pass through and at other times it is locked up and practically impervious to the passage of salts. It would

seem that conditions governing permeability should be taken into account in the study of this particular problem.

DR. WESTON A. PRICE, Cleveland: There were no implantations made in the peritoneum. They were made subdermally.

DR. MYER SOLIS-COHEN, Philadelphia: When we discuss focal infection we must remember that it is the bacterial infection rather than the diseased tissue that constitutes the focus. As a matter of fact, a bacterial infection can exist in the pharynx, in the tonsillar space after the removal of tonsils, or in the nose, without there being any visible evidence of disease. Of course, it will be said right away that in such cases the host is merely a carrier and that there is ordinarily no way of distinguishing between infestation in which the organism is in the throat of a healthy carrier and infection in which the organisms make the host sick. But it is possible, by means of the pathogen-selective culture, to distinguish between infestation and infection. A person's whole, coagulable blood possesses bactericidal power against organisms that are not infecting him and lacks it against organisms that are infecting him. An organism planted in a patient's whole, coagulable blood will grow in blood that lacks bactericidal power against it, and will disappear in blood that possesses bactericidal power against it. In a great many cases in which removal of the pathologic focus has failed to effect a cure, the bacterial focus still remains. The laryngologist removes the tonsils and with them removes the micro-organism present in them at the time of operation. But other organisms remain in the throat and continue the infection that caused the trouble in the first place; and until one gets rid of the bacterial infection in this focus, the patient frequently will not get well. He gets well only when, after the removal of the diseased tissue, which contained most of the organisms, he regains his bactericidal power against them. I agree with Dr. Black and with some of the other speakers, that lesions in the viscera are frequently secondary to infection in the upper respiratory tract, and my view has been that the infection of pulpless teeth frequently has a similar origin. It is possible to raise bactericidal power against those organisms against which the patient lacks bactericidal power by the proper administration of a proper vaccine properly made from them.

DR. JOHN J. SULLIVAN, Boston: I have given autogenous vaccines for focal lesions of the brain and cord following acute infections of the upper air passages, with apparent benefit. Of six cases treated, there was one complete recovery from the paralysis and a return to work, with improvement in all the other cases. Dr. Black stated that 78 per cent. of patients have systemic disease associated with focal infection. The patient comes to a physician because he or she is ill; therefore, the physician has to treat, in the large majority of cases, not those who have focal infection without systemic disease, but those having systemic disease dependent on focal infection. His duty, therefore, is clear—to advise removal of foci of infection.

DR. R. K. JOHNSON, New York: Dr. Price's observations on the inoculation of rabbits interested me very much, particularly his discovery that they also presented a blood inversion which corresponds to our own clinical findings in the human being. We have become accustomed to look on the blood picture as of considerable importance as an aid in both diagnosis and prognosis. When we find an inversion of the blood count we suspect the presence of focal infection. When we begin to find the blood picture returning toward the normal, we also begin to find coincidental improvement in the clinical condition of the patient. Dr. Black's second group, those patients harboring focal infections but not showing clinical symptoms, has impressed me. It is now easier for me to understand why, even when patients do harbor comparatively severe focal infection, the defense is so high that they are free from the usual symptoms. I should also like to speak about old age in reference to defense and dental infection. In cases of severe apical infection, peridental infection of the teeth, etc., these elderly patients recover their health when all dental infections are removed. I should like to stress the importance of the maxillary sinus infections. These are frequently overlooked and it is a common occurrence, and one cannot get rid of oral infection without getting rid of that.

DR. WESTON A. PRICE, Cleveland: I want to emphasize the fact that teeth may become infected from elsewhere. The evidence that we have obtained by cultural means from nearly all of the root filled or pulpless teeth that have been pulpless for more than a year shows that they got their infection from somewhere—from the respiratory tract or somewhere else. But, if they have become infected, are they ever going to get over that infection? No. The pulpless tooth is a sequestrum, and the body cannot destroy infection in that sequestrum unless it may carry its attacking forces up to the surface of the tooth and absorb the tooth piece by piece and get to the organisms inside, and that type of person is always the type with the absent susceptibility, and they alone have the absorption of the roots. With regard to Dr. Moorehead's comment, you will understand that in a fifteen minute paper I could not present controls. I have published more than a thousand pages of data and took for granted that that literature was available. I was giving conclusions from certain groups of data. We are finding that approximately 20 per cent. of the teeth that are proving to be infected, and such that we decide are related to some pathologic condition, do not have visible or roentgen-ray evidence of that fact. With regard to another point Dr. Moorehead raised about the controls in proteins: We have taken the tooth, crushed it, taken the washings from the tooth after centrifugating, and injected the centrifugate into animals and produced a depression in weight and death in about 50 per cent. from certain roentgen-ray negative teeth in six weeks' time. Still another point is that we have taken the organisms from the washed, crushed tooth of a patient with endocarditis and inoculated them into an animal and produced endocarditis. Safety from pulpless teeth is therefore always uncertain and related to defense and overloads, both of which are changing factors.

COMPLETE TRANSPOSITION OF THE VISCERA

A REPORT OF TWENTY-NINE CASES, WITH REMARKS ON ETIOLOGY *

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From the literature, one gathers the impression that transposition of the viscera is an exceedingly rare condition. However, the fact that twenty-nine cases have come under my personal observation would make it appear that the condition is not as infrequent as it has been considered in the past. This is accounted for by the fact that the number of individuals studied by the roentgen ray is vastly in excess of those studied post mortem in the anatomic or pathologic laboratories or observed in the operating room. Former statistics were based on the latter observations, while present statistics are made from roentgen-ray observations.

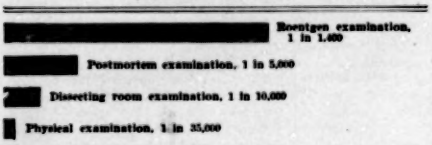
During the World War, when large groups of soldiers were examined roentgenographically, one observer is said to have found the frequency of transposition of the viscera to be one in 3,000 in a certain group examined. The experience of this medical officer was unique and probably overestimates the actual frequency of the condition. Personal observations were made as follows (Table 1): in a series of 5,000 necropsies, one case; in

* Read before the meeting on radiology in the Section on Miscellaneous Topics at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

* On account of limited space, part of this article and several illustrations have been omitted. The completed article will be published in the form of a reprint, a copy of which may be obtained from the author.

35,000 physical examinations of recruits for the U. S. Army, one case; in about 40,000 roentgen-ray examinations of the chest and digestive tract, twenty-nine cases, or about one case in 1,400. The latter frequency, however, is in excess of what would be the actual case in a consecutive series, as many of the cases were sent to me for roentgen-ray study when the transposition was already known to be present.[1]

TABLE 1.—*Relative Frequency of Discovery of Transposition by Various Methods of Examination (Personal Observation)*



The transposition is usually complete, including all thoracic and abdominal viscera, and the kidneys and suprarenal glands. In the case that I observed post mortem, the transposition of the suprarenal glands was proved. The crescentic gland normally found on the left side was replaced by the triangular gland normally found on the right side.[2]

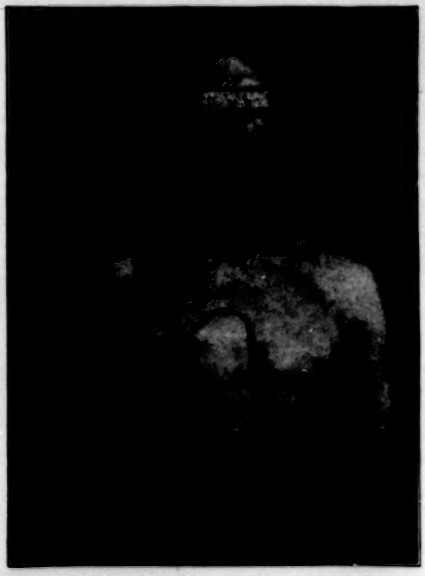


Fig. 1 (Case 2).—Outline of the heart, liver, stomach and spleen in a case of transposition.

In the living subject it would be possible, by the production of an artificial perirenal emphysema, according to the method of Carelli,[3] to distinguish the right and left suprarenal glands and to diagnose complete transposition by this means (Fig. 1). If a triangular suprarenal were encountered on the left side, it would lead to the presumption that there was complete transportation of the viscera.

The anatomists have not yet made it quite clear how this anomaly occurs. Dr. Alexander Fraser,[4] professor of pathologic anatomy at New York University, has recently encountered at necropsy a case of complete transposition of the viscera in a child of 3, at the New York Foundling Hospital. A case recently encountered in the dissecting room at Columbia University by Prof. George S. Huntington[4] is now being carefully studied and no doubt Professor Huntington will shortly publish his views in regard to the condition. Careful dissection of the vascular system of this case shows that the transposition is not confined to the thoracic and abdominal viscera as ordinarily supposed. It may have a much broader significance, possibly involving every structure in the body.

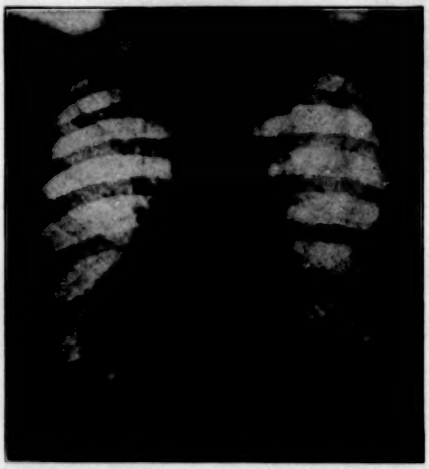


Fig. 2 (Case 28).—Typical appearance of transposition: complete reversal of heart and mediastinal shadows; *A*, aorta passing to right. Arrow points to gas in colon and in cardiac end of stomach on right side, indicating transposition of abdominal viscera. Confirmed by opaque meal and injection.

This is further borne out by the observations of Harris Hawthorne Wilder[5] in his study of the finger prints of duplicate twins, in which he found, in a number of cases, exact correspondence in the patterns of all the fingers with the exception of one, usually the right index finger. "The reversal of index patterns as seen in the right hands is a good typical example of that frequently recurring phenomenon, and seems to occur with too great frequency (four cases out of nine) to be disposed of simply as a lack of correspondence like the rest. The other cases, as has been shown, are

1. A large number of the author's cases were reported before the American Roentgen Ray Society at Los Angeles, in September, 1922.
2. Proc. New York Path. Soc., 1901.
3. Carelli, H. H.: Rev. Asoc. méd. argentina, 1920-1921; Am. J. Roentgenol. 10:259 (April) 1923.
4. Personal communication to the author.
5. Wilder, H. H.: Duplicate Twins and Double Monsters, Am. J. Anat., 1904.

Case	Sex†	Age	Referred to Author at	Referred by	Date	Clinical Diagnosis	Roentgen-Ray Diagnosis	Comment
1. B H.	♀	28	Pathologic Dept., N. Y. U.	Med. Division, Bellevue Hosp.	1909	Lobar pneumonia	.....	Transposition not recorded on physical examination made by instructor in physical diagnosis; necropsy by author; complete transposition including suprarenals
2. C. B.	♂	35	U. S. Army Hosp., Columbus Barracks, Ohio, for roentgen-ray examination	Examiner of Recruits	1909	Myocarditis with absence of normal heart sounds on left side	Complete transposition	Transposition not recorded on physical examination
3. E. S.	♂	35	Gibbs X-Ray Laboratory, N. Y. U.	Dr. A. Keane	1/14/11	Left sided appendicitis; dextrocardia	Complete transposition	
4. R. C.	♂	30	Gibbs X-Ray Laboratory, N. Y. U.	Medical student	5/ 2/12	Dextrocardia	Complete transposition	Although an opaque meal was not given, gas in cardiac end of stomach on right side led to a diagnosis of complete transposition
5. F. D.	♂	49	Gibbs X-Ray Laboratory, N. Y. U.	Dr. J. W. Hoffman	8/20/12	Dextrocardia	Complete transposition	
6. E. D.	♀	28	Roentgen Dept., St. Luke's Hospital	Dr. A. Malabre	1/15/13	Fracture of rib; dextrocardia	Complete transposition	Gas in cardiac end of stomach on right side led to a diagnosis of complete transposition
7. A. B.	♂	27	Gibbs X-Ray Laboratory, N. Y. U.	Dr. J. Wyckoff, Dr. Friedman	9/24/13	Pain in chest 3 yrs., dextrocardia	Complete transposition	Presence of cervical ribs may have accounted for symptoms
8. F. F.	♀	8	Roentgen Dept., St. Luke's Hospital	Dr. G. Pisek	2/14/14	Transposition of heart	Complete transposition	
9. C. S.	♂	35	Roentgen Dept., St. Luke's Hospital	Dr. S. Lambert, Dr. M. Shulman	4/24/14	Transposition of heart and liver	Complete transposition; hypertrophy of heart	On account of hypertrophy of heart, this case might easily have escaped detection on physical examination
10. I. G.	♂	16	Roentgen Dept., St. Luke's Hospital	Medical service, St. Luke's	12/22/14	Pulmonary tuberculosis	Complete transposition	In view of pulmonary tuberculosis, abnormal position of heart might have been erroneously attributed to traction
11. D. V.	♂	28	Roentgen Dept., St. Luke's Hospital	Dr. F. Mathews	3/ 7/15	Tuberculous cervical adenitis; question of transposition	Complete transposition	
12. A. C.	♂	26	Roentgen Dept., St. Luke's Hospital	Dr. H. H. M. Lyle	9/19/15	Subacute appendicitis, left side	Complete transposition	Transposition confirmed at operation
13. C. N.	♂	20	Gibbs X-Ray Laboratory, N. Y. U.	Dr. Wallace's service	2/10/16	Extreme curvature of spine	Complete transposition; extreme lateral curvature of spine with convexity to left in dorsal region	Transposition not recorded on physical examination; spinal curvature confuses not only the clinical but the roentgen-ray diagnosis of transposition
14. M. S.	♀	36	Roentgen Dept., St. Luke's Hospital	Dr. Reilly	2/22/16	Transposition of viscera	Complete transposition	
15. M. K.	♂	56	Gibbs X-Ray Laboratory, N. Y. U.	Dr. Levey	6/20/17	Cough for 4 yrs; loss of strength	Complete transposition	Transposition not recorded on physical examination; presence of aneurysmal dilatation of aorta no doubt accounted for symptoms
16. G. C	♂	18	Naval Examining Board, Gibbs X-Ray Laboratory, N. Y. U.	Dr. E. W. Gould, Dr. Dubois	8/14/17	Hypertrophy right side of heart or dextrocardia	Complete transposition	The report of an electrocardiographic examination at another institution did not mention transposition
17. W. E.	♂	28	Roentgen Dept., St. Luke's Hospital	Dr. S. Lambert,	.....	Transposition	Complete transposition	
18. A. B.	♂	36	Gibbs X-Ray Laboratory, N. Y. U.	Dr. S. A. Brown	2/23/18	Transposition ? hypertrophy of heart	Complete transposition	Extreme hypertrophy of right side of heart may simulate transposition on physical examination
19. L. G.	♂	45	Gibbs X-Ray Laboratory, N. Y. U.	Dr. Morse	5/20/18	Shortness of breath; pain in abdomen	Complete transposition; ? of peptic ulcer	Transposition not recorded on physical examination
20. F. B.	♀	11	Roentgen Dept., St. Luke's Hospital	Dr. M. C. Hill, Red Cross Station	6/11/19	Dextrocardia	Complete transposition	
21. J. H.	♂	55	Roentgen Dept., St. Luke's Hospital	Dr. J. H. Keating	7/31/20	Dextrocardia	Complete transposition	
22. W. K.	♂	21	Roentgen Dept., Willard Parker Hospital	Dr. S. Benton	5/17/20	Dextrocardia; thickened pleura, left chest	Complete transposition	Although an opaque meal was not given, complete transposition was inferred by the relatively high position of diaphragm on left side
23. R. K.	♂	19	Roentgen Dept., Willard Parker Hospital	Dr. Giddings	5/22/20	Dextrocardia	Complete transposition	Complete transposition inferred by relatively high position of left side of diaphragm
24. K. M.	♀	65	Private office	Dr. A. J. Love	5/ 1/22	Subacromial bursitis; (trans. lesion)	Complete transposition	Father and brother of patient, both physicians, were unaware of the transposition
25. J. S.	♂	4 mo.	Private office	Dr. F. H. von Hofe	11/24/22	Dextrocardia; question of complete transposition	Complete transposition	A previous roentgen-ray exposure on a double coated film, made elsewhere, was reported normal; proper use of lead markers on films would obviate such an error; this is the youngest patient in whom the condition has been observed by the author
26. M. K.	♂	14	Roentgen Dept., St. Luke's Hospital	Dr. D. E. Ehrlich	12/13/22	Complete transposition	Complete transposition	Diagnosis confirmed by electrocardiogram
27. N. P	♂	7	Private office	Dr. D. E. Ehrlich	3/ 6/23	Complete transposition	Complete transposition	Transposition detected on physical examination by admitting physician to Willard Parker Hospital
28. T. K.	♀	37	Gibbs X-Ray Laboratory, N. Y. U.	N. Y. U. and Bellevue Med. College Clinic	7/20/23	Gastric ulcer ?	Complete transposition	Transposition not recorded on physical examination; had been examined numerous times but condition not discovered
29. E. C.	♀	41	Roentgen Dept., St. Luke's Hospital	Medical Division St. Luke's	11/28/23	Pyelitis ?; cholecystitis ?	Complete transposition	Patient referred for roentgen-ray examination before complete physical examination; transposition detected on routine roentgen-ray examination of chest and confirmed by electrocardiogram

* Males, 21; females, 8; earliest age, 4 months; oldest age, 65 years; average age when examined, 30 years.
† In this column, ♂ indicates male; ♀, female.

usually or always those of transition patterns not really unlike morphologically, but in this case one pattern is the exact symmetrical equivalent of the other, and hardly capable of becoming identical by anything less than a complete rearrangement of the entire pattern" (Fig. 4). Though it is possible that an explanation for transposition may lie along these lines, a mirror imaging of the friction skin patterns does not necessarily signify a reversal of the viscera.

In describing duplicate twins, Wilder states that:

> It is well known that there are, at least in the human species, two types of twins; the first include those cases where the sex may or may not be the same and where the general resemblance is about what may be expected in the case of any two children of the same family; the second, those who are invariably of the same sex and who otherwise so closely resemble one another that it is difficult or impossible, especially during growth, for those not intimately associated with them to distinguish between them, the so-called "identical" or "homologous" twins. Although these two types are both very common, the second rather more than the first, there seems to be in the popular mind no clear distinction between them. The only hypothesis is that twins of the identical type are produced by the division of a single fertilized egg, while the other type results from the fertilization of two eggs, either from the same or different ovaries, and are thus two fundamentally distinct individuals.

Figure 5 demonstrates the theoretical possibility of the relationship between double monsters, duplicate twins and transposition. The manner in which the sub-

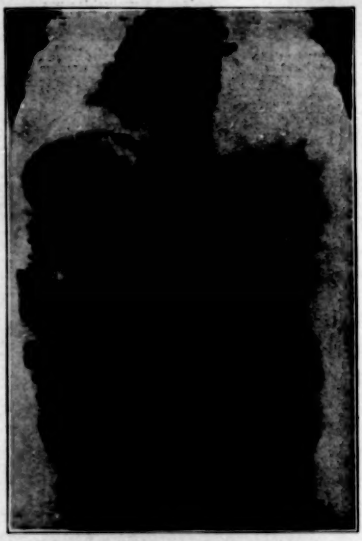


Fig. 3 (Case 27).—Complete transposition of viscera; mirror-like reversal compared with normal.

division of the ovum occurs might influence the production of transposition. Hence, one of all double monsters would not necessarily show a reversal. It is conceivable that complete transposition might result from some of the divisions illustrated in Figure 5. Transposition is said to have been observed in at least one case of duplicate twins.[6]

Dr. C. V. Morrill[7] of the department of anatomy of Cornell University Medical College made a definite distinction between double monsters and duplicate twins, giving little credence to the theory of some biologists that a double monster represents duplicate twins in which the separation has not been complete. According to Morrill,[8] transposition may be found in double monsters, particularly in the dicephalous or ischiopagus type, but is extremely rare in duplicate twins. When transposition does occur in double monsters, Morrill calls attention to the fact that the component showing the mirror image is less developed than the component in which the viscera are normally placed (Figs. 6 and 7).

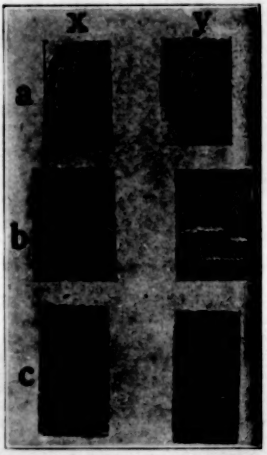


Fig. 4.—Finger prints of duplicate twins (*x* and *y*), reported by H. H. Wilder: *a*, right indexes; *b*, right middle fingers; *c*, right ring fingers. In *a*, there is a reversal. The possible significance of this reversal in relation to transposition of the viscera would require study of a large number of cases.

Theoretically, transposition might exist in the autosite of an autosite-parasite monster. If the parasite is taken into the body of the autosite during development, the result would be transposition in a single individual. But one would expect to find some sort of tumor, such as a dermoid cyst, in this transposed individual. Such has not been my experience.

Morrill says:

> It has sometimes been assumed that in normal development the direction of growth taken by the liver bud determines the plan of asymmetry of the remaining viscera. In the case of monsters having either two livers or a composite liver, it might be further assumed that the two liver buds, having formed independently, were drawn together by some sort of mutual attraction. If such a movement took place, the anterior ends of the two intestines together with the pyloric ends of the stomachs would be drawn with the livers toward the plane of union (Fig. 7). . . . The most suggestive observations in the field are those of Pressler, on experimentally produced situs inversus in *Bombinator*. The material was obtained from Spemann, who performed the following experiment: In the neurala stage, a four-sided piece of medullary plate, together with a portion of the roof of the primitive gut lying under it was cut out and replaced in reversed position, so that the anterior extremity of the piece was directed posteriorly, the posterior extremity, anteriorly. From these experimental embryos, tadpoles were reared which showed in many cases a complete situs inversus viscerum. It has sometimes been assumed, as stated above, that the asymmetrical growth of the liver bud normally toward the right influences the position of the remaining organs. The question then arises,

6. Prof. John Beard of the University of Edinburgh; personal communication from H. H. Wilder.
7. Morrill, C. V.: Personal communication to the author, May 30, 1924.
8. Morrill, C. V.: Anat. Rec. 16: June, 1919.

What determines the direction of growth of the liver bud? Spemann and Pressler's work seems to indicate that the factors controlling asymmetry are located in the primitive gut and probably arranged in such a fashion as to cause the gut in normal development to bend first toward the left, thus forcing the liver bud to grow toward the right. We may suppose that when the arrangement of these factors is reversed, as in the experiment, transposition is produced. Pressler's observations are, it seems to me, very important and indicate the direction along which further experiments should be made to determine the cause of asymmetry. They do not, however, throw any light on the cause of transposition in integmentary structures as found by Newman and Wilder.

The following is also taken from Morrill's paper:

A very interesting suggestion as to the cause of asymmetry in the viscera is based upon the fact, first pointed out by Crampton (1894), that in certain gasteropods the position assumed by the adult organs is correlated with the early segmentation pattern. In these snails the more usual type of asymmetry with dextral shell is associated with a right-handed spiral cleavage. Some forms, howeve-, such as *Physa* (Crampton) and *Ancylus rivularius* (Holmes), have normally sinistral shells and reversed asymmetry in the viscera; this condition was found to be associated with a reversal of cleavage. . . . It is very questionable, I think, whether this conception of the primary cause of asymmetry can be applied to vertebrates, for in monsters . . . both have arisen at the same period of development from a single blastoderm.

If it is possible that the brain is transposed, the location of the speech center may also be reversed. Furthermore, the question of right or left handedness may be involved, though as far as I know, in none of the cases reported was the person left handed. The importance of finding some criterion for distinguishing the right from the left handed individual is emphasized by the possibility of error in operations for brain tumor or brain abscess when the speech center is involved. The recent description by Dr. G. Elliot Smith of a unilateral groove and corresponding ridge in the skull, in the region of the lateral sinus, may be a means of distinguishing roentgenographically right handed from

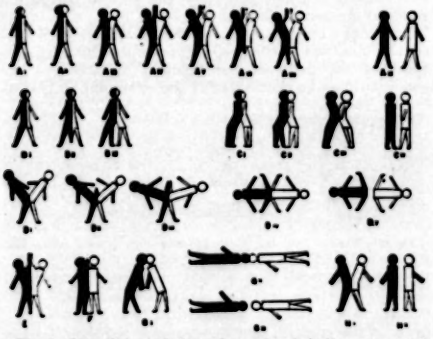


Fig. 5.—Interrelations of the various sorts of double monsters and duplicate twins, illustrating the theoretical connection with transposition of the viscera. (H. H. Wilder.)

left handed individuals, for in a right handed person it is on one side and in a left handed person on the other side. If further observation proves that it is possible to distinguish roentgenographically on which side this ridge is located, it may be a positive indication of right or left handedness. This might be of particular value in unconscious persons or in those in whom left handedness has been corrected in early childhood.

Attention has been directed by me and by a number of other observers to the use of the electrocardiograph

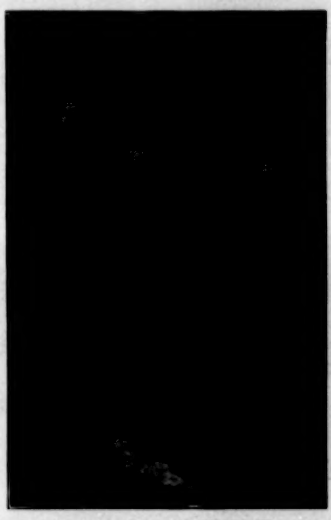


Fig. 6.—Double monster dissected by Morrill. The transposition of the viscera of the left component is shown in Figure 7.

in differentiating the diagnosis of transposition of the viscera (Fig. 8). One of the most complete articles on this subject is by Inada and Ishihara.[9]

ROTATION OF THE HEART (DEXTROCARDIA WITHOUT TRANSPOSITION)

There are two types of congenital dextrocardia: (1) that occurring in general transposition; (2) that unassociated with transposition. The latter, as an entity, is the rarest of all anomalies in the nature of transposition. A description appears in pathologic anatomies, but I have encountered only one case, and there is a question in my mind as to this being a true case of dextrocardia. Schrotter[10] states that none not combined with transposition of other viscera have actually been confirmed by necropsy, but other authorities do not agree with this.

The position of the aorta in the first type of dextrocardia is to the right of the median line (Fig. 9 *B*), while in the second type the aorta remains in its normal position (Fig. 9 *C*). In the second type (that unassociated with transposition), one would not expect to find the mediastinal shadows so completely reversed in the region of the aortic arch, nor the apex so sharply outlined as in the cases of dextrocardia associated with complete transposition of the viscera. In the latter cases, the roentgenogram of the heart and mediastinal shadows appears as if viewed in a mirror, or as if the

9. Inada, Ryokichi; and Ishihara, Makoto: Mitt. a. d. Med. Fak. d. K. U. Kyushun 4, No. 1, 1917.
10. Schrotter, cited by Abbott, in Osler's Modern Medicine 8:344, 1908.

roentgenogram were merely reversed, unless some pathologic condition happens to be associated with it, as in Cases 13 and 18.

Electrocardiographic examination is of assistance in determining this question, but it is not free from error in interpretation. (See Case 16.)

RETRACTION OF THE HEART

Retraction of the heart to the right side is not an unusual finding. The retraction may be so complete that none of the heart shadow can be made out to the left of the median line. This at once gives a clue to the condition, for, in transposition of the heart, the portion of the heart which is usually to the right of the median line is found to the left of the median line. Moreover, one can usually make out the roentgenographic evidences of fibrosis of the right lung and pleura which leads to the assumption that pleuropericardial adhesions,

Fig. 7.—Viscera of double monster shown in Figure 6. There is transposition of the viscera of the left side and greater development of the component having the normal position. (C. V. Morrill.)

together with contraction of the fibrous tissue in the lung, cause the retraction of the heart to the right (Fig. 10). When the roentgenographic evidence of fibrosis is lacking and there is no transposition of other viscera, the condition is to be regarded as the rotation type of dextrocardia.

One case of retraction of the heart to the right is here recorded, although many more have been observed.

DISPLACEMENT OF THE HEART

Displacement of the heart to the right from pressure on the left side has been observed in a large number of instances. The most common of these conditions is that due to a large amount of fluid in the left pleural cavity and is easily recognized on roentgen examination. Another condition that produces this displacement of the heart to the right is spontaneous or artificial pneumothorax. This can always be detected on roentgen-ray examination, but might be overlooked by an inexperienced observer. Tumors involving the left side of the chest may displace the heart to the right. Hernia of the diaphragm (Fig. 11) or eventration of the diaphragm is likely to displace the heart to the opposite side.

NONROTATION OF THE COLON

Nonrotation of the colon (Fig. 11) is a condition quite different from transposition of the viscera. It may, however, be associated with it, in which case a

Fig. 8.—Electrocardiograms of: *A*, heart in normal position (made by Prewitt); *B*, "inversion of all waves in the first lead, indicating dextrocardia" (St. Luke's Hospital); *C*, a case of transposition (made by Prewitt).

most interesting circumstance arises; namely, that the appendix will be found on the right side. Two cases of this combination of anomalies have come to my attention, one of them in an abstract of an article in one of the South American journals, and the other one in a personal communication from Dr. A. L. Bell, from a postmortem examination of an infant at the Babies Hospital, New York.

In nonrotation of the colon in persons with a high stomach there is apt to be an absence of the usual "caplike" formation about the first portion of the duodenum. This may lead to an error in interpretation of a supposed duodenal ulcer or periduodenal adhesions. In patients with a low stomach of the fish hook or J shaped type, the usual caplike formation may be present in the duodenum. It must be borne in mind that the duodenum does not pass behind the stomach, as a rule, in this type of case but joins the jejunum to the *right* of the median line. In case a gastroenterostomy becomes necessary, the anterior operation replaces the usual posterior one.

Nine cases of nonrotation of the colon have been personally observed in about 40,000 roentgen-ray examinations of the abdomen, or about 1 in 2,000. The condition may be overlooked if the examination is con-

Fig. 9.—Diagram from Dr. S. A. Reinberg; *At. V.*, venous auricle; *Ve. V.*, venous ventricle; *At. A.*, arterial auricle; *Ve. A.*, arterial ventricle. The numerals 1, 2, 3, 4 indicate the relative position of the cavities of the heart, and *A*, of the aorta. *A*, normal, *B*, transposition; *C*, dextrocardia; the aorta is to the left of the median line as in the normal; in transposition (*B*), to the right of the median line.

fined to the stomach and duodenum. No examination of the digestive tract should cease until the location of the cecum at least has been determined.

PARTIAL NONROTATION; HIGH CECUM

Additional cases of partial or incomplete rotation of the colon have been observed. In some cases the cecum is in the median line and in other cases exceedingly high, being in the usual location of the hepatic flexure.

CECUM MOBILE

A large number of cases of cecum mobile have been observed. This condition probably is due to excessive descent and lack of fixation of the cecum during the final stage of rotation of the colon. It appears to be of considerable surgical importance, as many of these patients have the appendix removed without relief of the symptoms referable to the right lower quadrant. In some of the latter cases, operative procedure, such as plication or fixation of the cecum, has relieved the symptoms.

Fig. 10.—Heart retracted to right by fibrosis.

CONCLUSIONS

1. Complete transposition of the thoracic and abdominal viscera is more common than generally believed.
2. Transposition of the viscera in the series of twenty-nine cases reported has been complete.
3. Transposition does not impair the health of the individual. It should not bar him from military service, nor should it in any way alter his status relative to life insurance.
4. Rotation of the heart on an axis, sometimes described as dextrocardia unassociated with transposition of the viscera, is entirely separate from transposition and is a very rare condition. I have encountered only one case.
5. Retraction or displacement of the heart can always be distinguished roentgenologically from transposition or rotation of the heart.
6. Nonrotation of the colon should never be confused with transposition of the viscera, from which it can always be distinguished by a roentgen-ray examination.
7. Cecum mobile is due to excessive descent of the cecum and is frequently wrongly diagnosed as chronic appendicitis.
8. A combination of two or more of these conditions may be present in the same individual; for example, failure of the colon to rotate in a person with complete transposition of the viscera will leave the appendix on the right side while the heart and stomach are also on the right side.
9. Extreme care should be taken to so mark all roentgenograms that the right or left side of the body can be unmistakenly identified.

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ABSTRACT OF DISCUSSION

DR. EDWARD S. BLAINE, Chicago: I have encountered a small group of cases of transposition of viscera, and have been particularly interested in the question of partial transposition; that is, reversed positions of organs in either the thorax or the abdomen only. On fluoroscopic observation, one is immediately struck with the view of a reversed position of the heart in these cases; but if the thorax is normal as to position of viscera, there may still be a situs inversus of the abdominal contents. In some of these cases the question arises, Which is the front and which is the back of the film? To offset this, Dr. Le Wald suggests that we place an opaque marker on the right and left sides, indicating this fact. This is very good if one does not make a mistake in placing these markers. If the patient lies prone, one may put the right marker on the left side of the patient and then the film is incorrect as to sides, and the scheme does not work. If the marker that is adopted in routine practice to denote one's work, case number, etc., is always placed face up, i. e., with the front side toward the tube target, one will always be able to identify the right and left anatomy without recourse to the R and L indicators. A proper knowledge of roentgen-ray anatomy is all that is necessary to distinguish the right and left sides of any film. I have occasionally encountered a case of partial transposition, but most of the cases prove to be complete reversals of the position of organs of the thorax and abdomen.

Fig. 11.—Heart displaced to right by congenital hernia or absence of left side of diaphragm. The cecum, hepatic flexure, transverse colon and splenic flexure are in the chest cavity. The jejunum, ileum and without doubt the appendix are also in the chest cavity. The stomach is in the abdomen. There is also a nonrotation of the colon.

DR. LEON T. LE WALD, New York: Dr. Blaine's remarks really have considerable interest, because I have seen the placing of the word "right" or "left" cause confusion. In one institution with which I am connected, the word "upright" was used and the first two letters had been cut off, leaving the word "right." We went over the films, and until I discovered this I thought I had another case of transposition. I think that Dr. Holmes does the same as I do; puts the numbers upside down. Then if the film is oriented so that one looks at the chest in the same way one would look at the patient, the numbers appear in their correct sequence, and in that way there is another check on the words "right" and "left"; furthermore, if one uses film holders on which a num-

ber or letter is placed upside down in a particular corner of the holder, it gives another check. I think that every roentgenologist should be able to go into court and be able to identify his own films. I know a case in which extreme confusion was caused because the roentgenologist could not identify his own film.

DIVERTICULA OF THE URINARY BLADDER

FEATURE OBSERVATIONS *

ROBERT V. DAY, M.D.
AND
HARRY W. MARTIN, M.D.
LOS ANGELES

Up to 1900, diverticula were almost universally a necropsy finding. Since that time, with the perfection of the cystoscope and methods of cystography, they have been observed rather frequently, and numerous

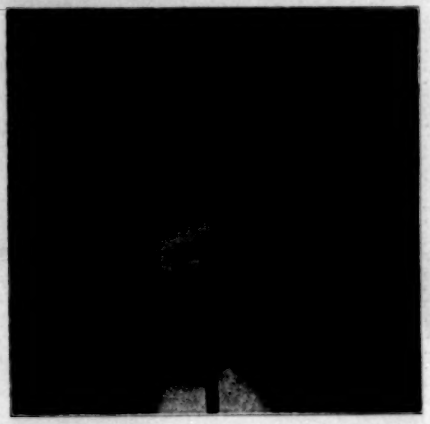

Fig. 1 (Case 1).—Diverticulum filled with sodium iodid solution and bladder injected with air.

urologists have published articles on the subject, eacn with a sizable series of case reports with operation. Therefore, it is our intention in this paper to consider certain features only, instead of attempting to put forth a comprehensive study of the diverticulum in all its aspects. The importance of diverticula is emphasized by the fact that a badly infected, poorly draining diverticulum, especially with ammoniacal urine, gives rise to subjective symptoms, namely, dysuria, pain and distress, not exceeded in severity by advanced vesical tuberculosis, carcinoma or stone.

It seems to be conceded that, in the vast majority of cases, two etiologic factors are operative: (1) embryologic defects in the bladder—weakened spots—and (2) obstruction (usually at the bladder neck). Our clinical experience coincides with this hypothesis, since, in practically every case, there has been some form of obstruction, either a hypertrophied prostate, a contracture or a bar.

* Read before the Section on Urology at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

There are numerous modifying factors which, having been determined, explain very satisfactorily the diversified clinical aspects of these cases. These are: situation (especially in relation to drainage), size of the orifice, size of the sac itself, number, presence of infection in various parts of the urinary tract and its bacterial type, focal infections, the nature and extent of the obstruction, secondary inflammatory changes in and surrounding the diverticulum, calculous formation and carcinoma.

LOCATION AND DEVELOPMENT

In from 75 to 80 per cent., the orifice is located near the ureteral opening and, in this type, as bladder neck obstruction in a given case progresses, one may observe the gradual increase in size of the diverticular sac, if cystograms are periodically resorted to.

Case 1.—J. M., a man, aged 64, an attorney, seen Dec. 8, 1919, presented, on the right side of the trigon, mesially to the right ureteral meatus, a small diverticulum with a large neck through which the distal wall could be plainly viewed. There were several small cellules on the left side. Cystography likewise showed only a small diverticulum. The residual urine was 160 c.c. The prostate was much hypertrophied, as evidenced both by cystoscopy and by rectal palpation. Ten years previously, the patient had held the urine for four hours after a desire to void. When he finally attempted to void, he was unable to do so, and had to be catheterized. He stated that his real urinary difficulty started from that time. Lately he had had more difficulty, due to advanced prostatism. He postponed prostatectomy for eighteen months. Cystograms made at intervals during this period showed the gradual increase in size of the sac (Figs. 1 and 2). March 20, 1921, prostatectomy was performed. Owing to the swelling of the ankles, and a heart without reserve, excision of the diverticular sac was not done. At present, three years after prostatectomy, the size of the sac remains the same, but the sac drains fairly well, as observed in the contrast cystogram (Fig. 2), illustrating the drainage into the bladder notwithstanding the injection of air after the method of Hinman.

Parenthetically, we may at this time contrast another type of diverticulum with an extremely small orifice (Fig. 3), showing both the diverticulum and the bladder filled with shadowgraphic solution. Figure 4 shows the sac still filled but the bladder emptied and immediately filled with air. This patient, as might be expected, suffered intensely from infection and inflammation.

These are the classical types and, in our experience, the walls, both grossly and microscopically, have been essentially fibrotic. Hinman [1] found them almost entirely denuded of epithelium; but, in this series, this has not been true, except in scattered areas of denudation, probably due to gauze packing. In addition, in every case of sizable diverticulum and well developed prostatism with the opening near the ureteral orifice, the sac has been rigidly adherent from peridiverticulitis, and may extend as far as the subpubic ligament subtrigonally. Drainage is usually poor, with stasis, infection and occasionally calculous formation, especially if the infective organism is one of the urea-splitting types—streptococcus, staphylococcus, or proteus, resulting in ammonical urine. When hematuria occurs, it is probably due, in the majority of instances, to abrasions or tears around the fibrotic orifice incident to spasm of the musculature peripheral to the neck. In advanced cases, neither the neck nor the sac itself possesses contractility, and whatever drainage takes

1. Hinman, Frank: The Etiology of Vesical Diverticulum, J. Urol. 3:207-246 (Aug.) 1919; Vesical Diverticulum, Surg., Gynec. & Obst. 29:150-172 (Aug.) 1919.

place must be by gravity, intra-abdominal and peri-diverticular pressure only.

The relatively rare forms that require excision are: (1) the hour-glass bladder and (2) the large singular diverticula arising at or near the dome, or on the lateral aspect high up near the vertex, with the wall composed grossly of all the coats, including the thick muscular wall found histologically interspersed with fibrous tissue, resembling the hypertrophied bladder found in advanced hypertrophy of the prostate; this muscular wall is merged into a semifibrous ring surrounding the orifice. Judd and Scholl,[2] in analyzing 144 cases, found these forms quite rare, and they have been scarcely more than mentioned in American literature and, hence, are worthy of special description.

Cystography is apt to mislead one as to the actual degree of retention that may take place even with a dependent drainage (Fig. 5). In Figure 5, the neck appears quite wide; but, as the bladder empties the constriction narrows, finally becoming so small that only about 1 ounce (30 c.c.) of urine is retained in the diverticulum. At a later stage, through inflammatory infiltration, bladder irritability and spasmodic contraction, the sac may be completely shut off from the bladder for a considerable time. This has not been observed in any of the diverticula with purely fibrous walls situated posteriorly between the bladder and rectum, unless the neck was extremely small.

HOUR-GLASS BLADDER

CASE 2.—J. H. B., a man, aged 25, a clerk, seen, Jan. 4, 1918, had had great frequency of urination both day and night for the past two months. He had lost some weight. There was no pain in either lumbar region. The urine showed little pus, but considerable blood microscopically, and occasionally frank hematuria. Renal tuberculosis was suspected. Cystoscopic observation disclosed an hour-glass bladder, the central portion coming together in an elliptic manner. This was demonstrated by cystoscopy while the bladder was being emptied, as well as by the stereoscopic cystogram (Fig. 5).

CASE 3.—G. L. T., a man, aged 39, a cinema director, seen, Sept. 7, 1920, had suffered from frequent urination, dysuria, and occasional hematuria for several years, with a gradual increase in the frequency and severity of attacks. For the past three years he had suffered periodically from pain on the right side, low in the flank. In 1919, the patient had arrived in California, and a little later was attacked by great pain in the bladder and intense desire to urinate, but was unable to do so. Finally, before a physician arrived, he voided bloody urine which, he stated, contained about a teacup full of clots. For nearly a year thereafter he was treated with vaccines, including tuberculin, by an illegal practitioner. His condition became progressively worse and, Sept. 7, 1920, one of us was called to examine him. The right kidney was slightly tender, but the point of greatest tenderness was over McBurney's point; there was no muscular rigidity. The temperature was 100 F., leukocytes 11,000. The urine was alkaline and contained pus, red blood cells, streptococci, staphylococci and colon bacilli. The temperature gradually rose for the next five days, reaching 103 F., with a leukocytosis of 23,000; polymorphonuclears, 79 per cent. September 15, a complete urologic examination was made under spinal anesthesia. The upper anterior portion of the bladder could not be sufficiently illuminated to obtain any sort of satisfactory view. The ureters were catheterized with ease, and bilateral pyelograms made, followed by stereocystograms. The cystogram, viewed stereoscopically, demonstrated an hour-glass bladder, with the upper half set at approximately a right angle forward to the lower half, in just about the same space relation that a normal uterus bears to the vagina. There was a marked polyuria from the right side, with pus and micro-organisms of the same type that were found in the bladder, with dilatation of the kidney pelvis and clubbing of the calices on this side. The left kidney had a good function, and its urine contained no pus or micro-organisms; the pyelogram and ureterogram on this side were normal (Fig. 6). The diagnosis was hour-glass bladder complicated by right pyonephrosis. Right nephrectomy, to be followed in a few weeks by amputation of the upper half of the bladder, was advised. It was not thought advisable to operate on the bladder until after the removal of the kidney that was feeding it progenic cocci.

September 19, right nephrectomy was performed. The patient was discharged from the hospital in three weeks, but soon thereafter developed a severe sciatica, which persisted until his death. A few weeks later, he was attacked with a severe infection of the remaining kidney, with pain, tenderness, severe constitutional symptoms and almost complete anuria. Cystoscopic examination was difficult, and the left ureter, so easily catheterized on the previous occasion, could not be catheterized for more than 4 mm., owing (as later found out) to carcinomatous infiltration.

Feb. 4, 1921, through a perirectus incision, the left ureter was transplanted into the skin of the abdomen. Before the ureter was detached from the bladder (2 cm. above the stenosed portion), it was found distended to the size of a thumb, and contained purulent urine. After the transplantation, the phenolsulphonephthalein output rapidly rose to a compensatory percentage. About three weeks later, a mass developed which could be easily palpated above the pubis, as well as bimanually with the finger in the rectum. At this time, a catheter was inserted and the bladder found empty; the bladder was irrigated and thoroughly emptied. Two hours later, the patient voided 25 c.c. of pus, with a consequent diminution of the size of the suprapubic mass. The bladder had been occluded at the constricting point of the hour-glass, with upper half filled with exudate, which under pressure was later discharged into the lower half.

Fig. 2 (Case 1).—Condition two years later: diverticulum injected with sodium iodid solution (central figure), bladder injected with air, and some leakage on each side from the diverticulum into the bladder.

March 8, the upper half of the bladder was resected and found to be grossly carcinomatous, with thick, irregular outgrowths from the mucous membrane, which infiltrated the wall of the upper half of the hour-glass, and histologically was medullary carcinoma.

It was very evident in this case that communication between the upper and lower halves was shut off by inflammatory and carcinomatous infiltration plus muscular spasm.

2. Judd, E. S., and Scholl, A. J.: Diverticulum of the Urinary Bladder, Surg., Gynec. & Obst. 32:14 (Jan.) 1924. Judd, E. S.: Diverticula of the Bladder, Ann. Surg. 68:298-305 (Sept.) 1918.

DOME DIVERTICULUM

Case 4.—C. C. W., a man, aged 66, a physician, seen, Dec. 19, 1921, with a temperature of 102 F., had had symptoms of prostatism for several years, and difficulty of urination for the past ten days, following catheterization and prostatic massage elsewhere. The bladder could be felt suprapubically nearly to the umbilicus, principally on the right side. The

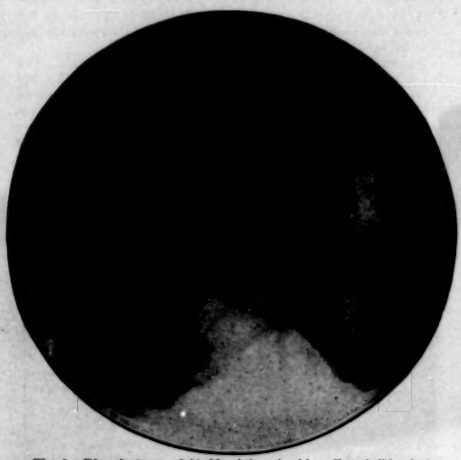

Fig. 3.—Diverticulum and bladder injected with sodium iodid solution.

patient himself had suspected for some time that this mass was a hydronephrosis, although it was low down. He was admitted to the hospital, and decompression was gradually performed. The blood urea was normal; the carbon dioxid in the blood showed slight acidosis. Four days later the phenolsulphonephthalein output was practically normal.

December 17, a cystogram was made with 6 ounces of sodium bromid solution in the bladder; the diverticulum appeared as large as the bladder. Stereoscopically, the diverticulum apparently was situated anterolaterally, with a rather large opening and some constriction at the neck. The afternoon temperature remained above 102 F. for ten days, notwithstanding an indwelling catheter. A mass the size of a turkey egg persisted on the right side, although the bladder was kept empty after the first two days. After a rigid examination, it seemed that the principal source of the infection was in the diverticulum; accordingly, on the following day, suprapubic cystotomy and excision of the diverticulum were performed. The wall of the diverticulum was thick, and contained all the coats of the bladder. It contained 40 c.c. of purulent urine, and the opening into the bladder was constricted and so small that it could not drain. The fever promptly subsided, and a successful prostatectomy was done one week later.

Case 5.—A. S., a man, aged 68, a retired physician, seen, Oct. 30, 1923, had led a catheter life for three years. The urine was badly infected and foul. The condition was of the same type as in the preceding case. November 5, a suprapubic cystotomy and diverticulectomy were performed. Much wound infection followed. The heart had no reserve, the feet and ankles were swollen, and the patient was short of breath and wheezy. We despaired for a time of being able to perform prostatectomy except at too great a risk. Finally, after a month, a large prostate was enucleated. The diverticulum contained all the coats of the bladder, and was removed still containing considerable purulent fluid. At present, the urine is clear and there is no residual urine.

ORIFICE AS FACTOR

Buerger[3] reported a patient with a diverticulum containing a small papilloma, which manifested sphincteric action of the orifice when the high frequency spark was applied to the growth; this occurred on five different occasions. He also cites three other cases from the literature, in which sphinteric action was manifested by touching the diverticulum ring through a suprapubic exposure. Case 6 is one in which there was a sphincteric action.

Case 6.—F. E. W., a man, aged 58, had developed a hematuria two days before examination, which had ceased a few hours before cystoscopic examination. No bleeding could be observed in the bladder or at the bladder neck. The verumontanum was granular, and bled rather readily. The urine was clear macroscopically, but contained numerous red blood cells and considerable albumin. The residual urine amounted to 20 c.c. Neither rectal palpation nor cystoscopy revealed hypertrophy. There was no trabeculation and there were no bleeding spots. On the right side, 1.5 cm. above the ureteral orifice, was situated a small diverticulum as large as a pea. This was distinctly not a cellule. As the bladder was emptied and filled several times, the perfect sphincteric action of the orifice was observed; the opening appeared a perfect circle with radiating lines at all stages, until it finally closed exactly like an iris diaphragm. The musculature surrounding the orifice at this time must have been entirely free from inflammatory infiltration or cicatricial tissue.

Analyzing the observations made in these cases, we must see that the orifice is a most important factor in anterosuperior dome diverticula with thick muscular coats. The position of the opening tends to favor drainage; but when an inflammatory exudate occurs, the bladder irritability and intolerance of distention begin, and the swollen and contracted muscle at or

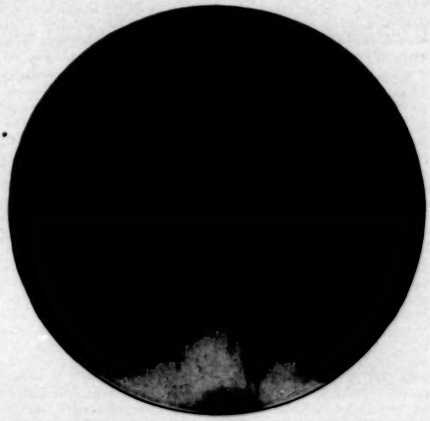

Fig. 4 (same case as in Fig. 3).—Bladder injected with air, diverticulum injected with sodium iodid solution.

around the neck shuts off communication with the bladder. This seems to be a very late occurrence, but progresses rapidly when it once reaches a certain stage. On the other hand, the posterior diverticula are not capable of true contraction, but simply collapse; intra-abdominal pressure may partially empty these. It was

3. Buerger, L.: Contractile Orifice of Diverticulum of the Bladder, Urol. & Cutan. Rev. 22:135 (March) 1913.

demonstrated cystoscopically in Hagner's [4] remarkable case with a diverticulum holding 16 ounces (475 c.c.) that the opening was large; otherwise the patient must have developed severe symptoms.

Another type of diverticulum of considerable clinical importance, although rare, is the small fibrous one usually just above and very close to the ureteral orifice.

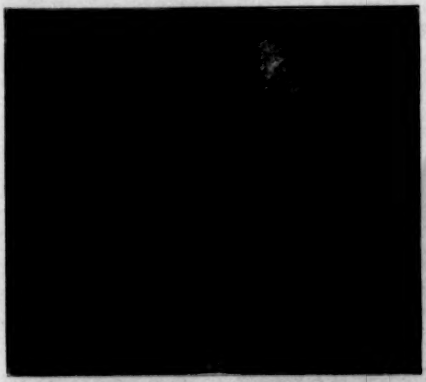

Fig. 5.—Bladder injected with sodium iodid solution, showing indentation on each side, which, on further emptying of bladder, leaves typical hour-glass bladder.

We have seen two cases of this type, each with a marked hydronephrosis on that side, in which the etiology of the hydronephrosis could not be accounted for on any other basis. There was perfect drainage in both, and neither was larger than a pea—in fact, they might almost be classed as cellules.

TREATMENT

When the patient presents himself with an ammoniacal urine, we have found intermittent catheterization, washing out the bladder with a 1:500 protargin mild solution, and leaving several ounces of this solution in the bladder before withdrawing the catheter, to be the most efficient method of neutralizing the urine. Under these conditions, with residual urine, silver oxid will invariably be precipitated and remain in the bladder and diverticulum as a black sand, and this will fix the ammonia as a nonirritating double salt as fast as ammonia is generated. If the solution is too strong, too much silver oxid will be precipitated and mechanical irritation may result.

One patient was seen with an enormous diverticulum (containing a stone), through the orifice of which one could insert the finger under the trigon clear to the suprapubic ligament. The orifice was situated 2 cm. above and about 8 mm. internal to the right ureteral meatus. The patient could not tolerate a retention catheter even for a few hours, notwithstanding his being given altogether three-fourths grain (0.05 gm.) of morphin during this time. Suprapubic cystotomy was performed, the stone was removed from the diverticulum, and two Pezzer catheters were inserted, one in the diverticulum and one in the bladder. The catheter in the diverticulum caused intense distress and had to be removed. Later on, Squier's operation was performed—that of dividing the walls between two small stomach clamps clear to the bladder neck, and suturing over the edges. After about three weeks, before the suprapubic wound had entirely healed, cystoscopy was done with the McCarthy instrument, allowing the bladder to fill and empty and observing the effect on the wall of the bladder and diverticulum where the incision had been made. As the bladder emptied, the previously sutured edges came together like the rectus abdominis muscles at a suprapubic operation when a patient is struggling under partial ether anesthesia. This prevented the last 50 c.c. from being expelled from the diverticulum. It became necessary to excise the diverticulum and transplant the right ureter.

It has been repeatedly stated by various authors that the one-stage operation is usually the one of choice. There is no gainsaying this; but many patients with both diverticulum and hypertrophied prostate are in such a deplorable condition that preliminary drainage is necessary, and some of them have such severe cystitis that a retention catheter is not tolerated, and continued intermittent catheterization is difficult or eventually impossible because of a large prostate. A two-stage operation is absolutely necessary in such a case. One of the drawbacks, however, is the fact that the bladder is kept emptied by the suprapubic drain, with ensuing shutting down of the diverticular orifice. The bladder no longer manipulates urine, and the stasis in the diverticulum is practically complete. We have seen cases following prostatectomy with the suprapubic drain still in and the bladder frequently irrigated in which the putrid odor from the diverticulum became even worse than before the operation. The suprapubic wound is

Fig. 6.—Hour-glass bladder in which carcinoma subsequently developed in the upper half.

difficult to close under such conditions. Placing a Pezzer catheter in the diverticulum may help, but it is usually productive of much tenesmus.

If the diverticulum lies between the rectum and the base of the bladder and its walls are rigid and extremely adherent, and the prostatectomy has already been done, it appears wiser to wait at least three weeks before the

4. Hagner, F. R.: Case of Diverticulum of the Bladder, Tr. Am. A. Gen.-Urin. Surg. 6:51, 1914.

excision of the diverticulum, owing to the friable condition of the tissues about the suprapubic wound. After some time has elapsed, this friability tends to disappear, and the loosening of the bladder and dissection become less difficult.

In one patient with four diverticula, two of them just above and extremely close to the ureteral orifices, it was found that not enough tissue above the ureteral meatuses could be obtained to close the opening. With two other sizable diverticula situated high up on either side, it would have left too much distortion of the bladder if the diverticula had been excised individually and suture attempted. Therefore, the dome of the bladder, with the posterior wall down to the inferior edge of the diverticula at the orifices of the ureters, was completely excised. So little bladder was left that coaptation of the cut edges was deemed inadvisable. Bleeding was controlled by whipping over the cut edges all around with catgut. The patient made a recovery, and in a few weeks the bladder closed, and the capacity rapidly increased during the next few months with a very satisfactory result, the patient being transformed from a person who had suffered intensely from frequency and dysuria for several years into one who leads a reasonably comfortable life.

This case illustrates the remarkable reparative powers of the bladder, which we have demonstrated in three other cases in which we have operated for various conditions, with a similar result so far as regeneration of the bladder was concerned.

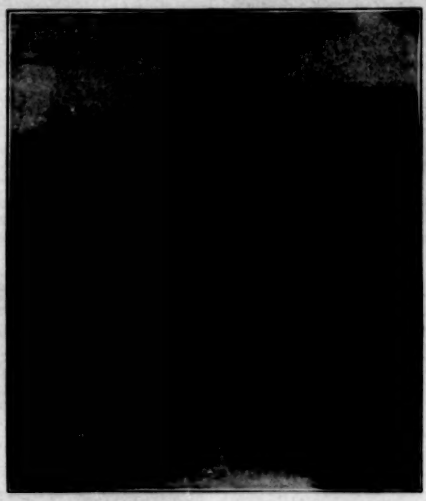

Fig. 1 (Case 1).—Appearance, April 21, 1922.

CONCLUSIONS

1. Nearly every diverticulum with marked clinical symptoms is associated with prostatism, either hypertrophy or bladder neck contracture. Rarely the symptoms may be caused by ureteral obstruction.

2. Surgical relief of the obstruction is necessary in almost every instance.

3. Excision of the diverticulum is indicated in the case of well developed sacs of moderate or large size, if drainage is poor.

4. Advanced degenerative changes in the cardiovascular system and kidneys may make inadvisable excision of the sac itself, unless the cystitis is intolerable.

Detwiler Building.

Cost of State Wards.—The average daily population at the various Ohio state institutions, for the year ending June 30, 1924, was 25,209. The annual cost per capita was $241.43, which is $1.21 less than for the previous year. Additional room was provided during the year by the construction of new buildings costing more than $3,500,000. The operating expenses of the department of welfare were more than $8,000,000.

RECURRENT CALCULI IN THE URINARY TRACT*

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NEW YORK

Believing that perhaps more light could be thrown on the interesting subject of recurrent calculi by an exhaustive study of cases in a clinic as yet unheard from on this problem, I undertook this investigation.

Surgical procedure for vesical calculi greatly antedates that for kidney and ureteral calculi. Ultzman [1] quotes Olympios of Athens as having shown that lithotrity was done in the ninth century. About 1560, Pierre France first removed a vesical stone by suprapubic lithotomy in a child 10 years of age, and the patient recovered. Civiale, Jan. 13, 1824, actually first crushed a vesical calculus by an instrument passed through the urethra. In 1878, litholapaxy was introduced by Henry J. Bigelow of Boston. In 1871, Simon [2] first performed nephrectomy for renal calculus. In 1880, Czerny first performed pyelolithotomy, and in the same year, Morris first performed nephrolithotomy.

In 1901, Israel [3] reported a case of bilateral renal calculi with recurrence on the left side in seven months, two years and four years; also a case in which a patient, aged 27, had right and left renal colic and cloudy acid urine with numerous erythrocytes, on whom he did a right pyelolithotomy in 1893. In 1894, left pyelolithotomy was performed, and a recurrence on the same side made necessary a left nephrolithotomy in 1898. Jeanbreau,[4] in 1910, reported that in a study of 1,239 case histories, Bloch's was the only one recording recurrence, and he felt that what was recorded as recurrence was perhaps a particle left from previous operation. Walker,[5] in 1914, stated that uric acid and calcium oxalate calculi recur rarely, while phosphatic calculi recur frequently.

Among our own modern writers, Cabot and Crabtree,[6] in 1915, reported that in a series of 155 cases in

* From the James Buchanan Brady Foundation-New York Hospital.
* Read before the Section on Urology at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.
* Because of lack of space, this article is abbreviated in THE JOURNAL by the omission of several illustrations. The complete article appears in the Transactions of the Section and in the author's reprints.

1. Ultzman, cited by Watson, F. S., and Cunningham, J. H.: Genito-Urinary Diseases, New York, 1906; Kidneys and Ureters, 1906; Prostate and Bladder 1: 563, 565, 567, 1906.
2. Simon, cited by Garré, C., and Ehrhardt, O.: Nierenchirurgie, Berlin, 1907.
3. Israel, J.: Chirurgische Klinik der Nierenkrankheiten, Berlin, 1901.
4. Jeanbreau, E.: Des calculs de l'uretère, Ann. d. mal d. org. gén.-urin. 2: 130, 1910.
5. Walker, J. W. T.: Surgical Diseases and Injuries of the Genito-Urinary Organs, 1914.
6. Cabot, Hugh; and Crabtree, E. C.: Frequency of Recurrence of Stone in the Kidney after Operation, Tr. Am. A. G.-U. Surg. 101: 169-182, 1915; Surg., Gynec. & Obst. 21: 223-225, 1915.

which operation was performed for stone in the kidney and ureter covering a period of eight years, they were able personally to examine subsequently eighty-seven cases. Of the eighty-seven cases thus examined, there

Fig. 3 (Case 1).—Appearance, supine position, Oct. 3, 1922.

were sixty-six cases of stone in the kidney and twenty-one cases of stone in the ureter. The cases of stone in the kidney showed that thirty-four patients, or 51 per cent., were well, and thirty-two, or 49 per cent., were not well. Of the patients with stone in the ureter, fifteen, or 71 per cent., were well and six, or 29 per cent., were not well. By "well" they meant patients on whom a previous operation for stone had been performed and who, on subsequent examination, presented a negative physical examination, so far as the urinary tract was concerned, who had a urine normal on chemical and microscopic examination, and in whom the roentgen-ray examination was negative.

Braasch,[7] in 1917, in a review of 450 cases of nephrolithiasis covering a period of eighteen years, reported that twenty-three patients had had previous kidney operations. Fifty-three gave a definite history of passage of stone and fourteen a questionable history of passing stones. Thirteen of eighty-eight patients reexamined (14.7 per cent.) had recurrence. Answers to letters of inquiry were received from 247 patients. Of these, 241 were negative for recurrence, fifteen gave a history of probable recurrence, and eighteen had passed stones subsequent to operation. This resulted in a total known recurrence of forty-six cases, or 9.8 per cent.

Barney[8] was able to obtain subsequent data on thirty-five of a series of seventy cases of nephrotomy, done over a period of twenty-five years. Out of sixteen who had a roentgenographic examination, fourteen showed the presence of stone in one or both sides, giving a percentage of 40 of those whose definite results were known.

Among the modern foreign writers, Legueu,[9] in 1922, reported two recurrences in two years and eighteen months, respectively, following primary operations, and Fleischer [10] reports a good prognosis six months following the passage of several small calculi by a 14 year old boy, treated only by Cantani's sugar free diet.

In the general surgical service at New York Hospital from Jan. 1, 1914, to Jan. 1, 1924, there were admitted 304 cases of urinary calculi, classified as follows: kidney, 205; ureter, seventy-three, and bladder, twenty-six. Eighty-three operations were done for nephrolithiasis and twenty-seven operations for stone in the ureter. Among these patients, 3 per cent. passed stone before admission and 3 per cent. had had operations for stone prior to admission. There is a record of the condition of the teeth in six cases, as follows: no teeth, one; bad, four; fair, one; good, none. In this series, 8 per cent., or twenty-two patients, were operated on for stone in the kidney or ureter, who subsequently demonstrated calculi as follows: nine by operation; one passed stones; twelve by roentgen-ray. The earliest recurrence recorded was three weeks and the longest interval ten years, averaging three years and eleven months, this average being a little greater than those reported by previous authors. The average time of secondary stone, in those patients giving a history of passing stone before original admission to the hospital, was three years and seven months.

There was a record of the condition of the teeth in eight of the twenty-two recurrences, as follows: good, three; fair, two; bad, two; no teeth, one. There was

Fig. 8 (Case 1).—Appearance, April 25, 1923.

also a report of infected tonsils in one case. The original operations on the twenty-two patients who had recurrences were: pyelotomy, seven; nephrectomy, four,

7. Braasch, W. F.: Clinical Data of Nephrolithiasis, Jan. 1, 1898, to Jan. 1, 1916 (Surg., Gynec. & Obst. 24:8 [Jan.] 1917).
8. Barney, J. D.: Question of Recurrent Renal Calculi, Surg., Gynec. & Obst. 35:743-748 (Dec.) 1922.
9. Legueu: Les calculs de l'uréthre, J. d. practiciens 36:210-212, 1922.
10. Fleischer, J.: Erfolg der Cantani'schen Diät bei der Behandlung eines Falles von oxalsaurensauren Kalknierenstein, Deutsch. med. Wchnschr. 49:1058 (Aug. 10) 1923.

nephrotomy one. The secondary operations in these cases were: pyelotomy, one; nephrectomy, five; cystotomy, two and in one case there were two nephrotomies and one ureterotomy. There was one death following one of the secondary nephrectomies. As this percentage of recurrences includes only those cases definitely demonstrating stone following operation in New York Hospital, and as it is perhaps more difficult to obtain follow-up data in New York than in other localities, we may assume that perhaps the percentage of recurrence should be higher than I have found it. Furthermore, if the patients who gave a history of passing stone previously and those previously operated on for stone were included, this also would increase the percentage of recurrences. On the other hand, this may be balanced by the lack of postoperative roentgen-ray records on this series, which makes impossible an exact differentiation between those cases of definite recurrence and those of left over stones.

Since the establishment of the urologic department in the New York Hospital, in December, 1920, the following cases of calculi in the urinary tract have been admitted: kidney, thirty-nine; ureter, eighteen; bladder, nineteen; prostate, three and urethra, one.

A statistical study of the nephrolithiasis cases gives the following results: those with a history of previously passing stone, unilateral, eight; bilateral, one; a questionable history of stone, six (under "questionable" I have included those patients having sudden relief from classical colic but who did not notice stone); previous operation for stone, five; previous laparotomies with relief, three, and previous laparotomies without relief, three. The average age of these patients was 39½ years, and the thirty operations done were thus divided: nephrotomy, seven; nephrectomy, six; pyelotomy, fifteen; nephrotomy and pyelotomy, two.

A study of the eighteen ureteral calculi cases shows the following: previous history of passing stone, one (unilateral); questionable history of passing stone, two; previous operation for stone, two; previous laparotomies with relief, two, and previous laparotomies without relief, two. The average age was 40 years. Four of these patients had stones too large to pass and were operated on, and the majority of the remainder passed stones following ureteral dilations.

Subsequent examinations have been possible on twenty-eight of this series of fifty-seven patients, with definite recurrences found in three cases (10 per cent.). One of these patients showed calculi eight months after primary operation, and no stone to date, four months following secondary operation. One patient showed calculi after the second operation, the last two having negative roentgen-ray findings following each operation. Realizing that it is possible for small uric acid calculi to escape roentgen-ray detection, I should like to emphasize that the composition of these recurrent stones was as follows: One was composed of ammonium and magnesium phosphate, one of calcium phosphate, with a small amount of calcium carbonate, and two were composed of ammonium and magnesium phosphate, with calcium phosphate. Two of the recurrences in this smaller series followed pyelotomies; one bilateral recurrence followed bilateral operations, nephrotomy and pyelotomy, respectively. There was one death in this entire series—that following a pyelotomy in an elderly patient. There is a record of two patients who passed a stone following nephrotomy and one patient who passed a stone following pyelotomy. In none of the nephrotomies was nephrectomy necessary for secondary hemorrhage.

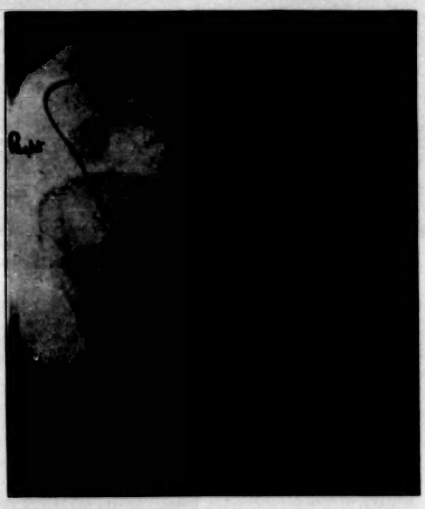

Fig. 13 (Case 1).—Appearance, Nov. 22, 1923.

Despite these last findings, I feel that pyelotomy is the operation of choice, as is evidenced by the operative statistics. There is unquestionably less danger of postoperative hemorrhage, and less destruction and distortion of kidney tissue, thereby lessening the possibility of recurrence. When the size and shape of the stone make imperative a partial nephrotomy, the ligation or avoidance of the retropelvic artery, as described by Eisendrath, greatly minimizes the seriousness of this procedure. Although a careful preoperative study of the case in general gives a definite idea of the method of approach most to be desired, this cannot be definitely determined beforehand. We have been kindly inclined to the idea of including in the pyelotomy closure a piece of perirenal fat, using care that the sutures do not appear on the inner surface of the pelvis and perhaps act as places of deposit for urinary salts. In some cases the pelvis has been left without sutures. No permanent fistulas have followed this technic.

Repeated cultures of the urine from the involved kidney in our recurrent cases have demonstrated *B. coli-communis*, *proteus* or *pyocyaneus* in all cases, and in all of them some form of stasis has been present. Until more definite knowledge is contributed regarding the cause of stone formation, we must feel that while infection and stasis per se cannot necessarily be credited with stone formation, they must be included as definite contributory factors, in conjunction with metabolic irregularities, particularly in a patient predisposed to stone formation.

In the preoperative study of stone cases, Barney[8] has suggested that roentgenograms be taken with the patient on his face, side and back to overcome the possibility of superimposed shadows. The same author and

the Mayo clinic have suggested the fluoroscope at the time of operation, to minimize the possibility of overlooking small calculi. With the adoption of these methods and the well known procedure of thoroughly investigating the calices and kidney substance with a blunt pointed flexible probe, and a thorough lavage of the pelvis and tapping the kidney at time of operation as suggested by Caulk, the number of left over calculi has undoubtedly decreased. Postoperatively, all cases should have a roentgen-ray examination before discharge from the hospital. A secondary operation should be done early, as suggested by Barney, but only in cases in which inaccessibility of the calculus renders unlikely the possibility of its passage following manipulation.

The work of Bumpus [11] and Rosenow, with which we are all familiar, has shown us the vital importance of eliminating foci of infection in the teeth, tonsils and sinuses in a study of urinary calculi. An analysis of the chemical composition of calculi, removed at operation in conjuntion with the urine reaction, will afford a valuable guide in the outline of the indicated diet and medication for the patient. This point may be further emphasized by our present knowledge that secondary calculi develop in an alkaline urine and are composed of mixed phosphates.

Ochsner [12] and Rovsing [13] believe that 2 liters of distilled water daily will prevent recurrence, and Cantani [14] has outlined a sugar-free diet which he includes as postoperative routine in all cases. While these two suggestions have no doubt been of great practical value, it would seem that we should still further augment our treatment and diet by attempting to correct all known existing anatomic, metabolic and bacterial irregularities Obstruction with its resulting stasis, as demonstrated by pyelography and ureterography, may be treated by mechanical support of the ptosed kidney and dilation of the kinked or constricted ureter. In cases showing the latter condition, a bimonthly generous dilation, combined with pelvic lavage, should be adopted as a routine. Our technic at present is to allow the dilating bougies and catheters to remain in position for three or four hours, and to follow their introduction and precede their withdrawal with a pelvic lavage. In two of our recurrent cases, the patients are more comfortable and in better general health today under this routine than at any time since their original calculi. Vaccines may also be prepared from cultures of infected urines and from dental and other foci.

The following abstracted case histories will perhaps illustrate some of the attempted points of this paper:

REPORT OF CASES

CASE 1.—A. D., a single woman, aged 37, who came to the hospital, April 17, 1922, had had appendectomy and uterine suspension seven years before and a left nephrotomy two years before, with removal of a stone weighing 2 ounces (60 gm.). She had had pain on the left side for six months and frequency of urination every hour, day and night. The urine was turbid, many white blood corpuscles, and a few red blood corpuscles being present. A phenolsulphonephthalein test resulted in the return of 22 per cent. in two hours. There was very slight function from the left kidney.

April 21, roentgen-ray examination disclosed a large stone deposit in the lower right kidney and in the left kidney, which was in good position. A pyelogram of the left kidney showed disintegration. The left kidney was not injected because of stricture at the upper end of the left ureter. Both ureters were dilated and relaxed.

June 20, pyelotomy was performed on the right, with a low incision. The kidney was low in the pelvis, hugging the concavity of the ileum. The liver border was low, on the upper pole of kidney. The pelvis was greatly dilated. Inflammation and dilatation of the ureter were noticed. Nine or ten stones were removed from the pelvis. The stones were composed of ammonium and magnesium phosphate, with a little calcium phosphate.

October 3, roentgen-ray examination showed a large left renal calculus. Pyelotomy, left, disclosed a stone filling the pelvis and branching into the calices.

October 25, a whalebone catheter could not be passed more than 7 cm. into the left ureter; a No. 5 passed 28 cm.

October 18, in a roentgenogram, three shadows were seen in the region of the left kidney, and three shadows at the lower right pole. The right kidney was very low.

October 20, a roentgen-ray catheter passed on the left side to the level of the fourth and fifth lumbar vertebrae and three small shadows were seen in the region of the left kidney. The injection did not pass the end of the catheter.

October 25, a roentgen-ray catheter passed to the level of the fourth lumbar vertebra. There was no injection. There were suggestive shadows at the lower left and right poles.

April 22, 1923, the patient was admitted to the hospital. Only 4 ounces (120 c.c.) of urine was passed in twenty-four hours. Soreness had begun on the right side six weeks before. The urine, with a specific gravity of 1016, was straw colored and alkaline, with red blood corpuscles, many white blood corpuscles and a moderate amount of albumin. The abdomen was slightly distended and rigid on the right side. There was a definite tender mass over the right iliac crest. On cystoscopy, the bladder was found to be filled with cloudy, purulent urine. A No. 7 French catheter was passed to the pelvis. The flow was steady and very cloudy; 60 c.c. of urine was drained from the right kidney. The patient was very much relieved, and the tender mass went down. The catheter was tied in place for eleven hours.

April 25, roentgen-ray examination disclosed an appearance of shadows on the right side, suggestive of movable calculi in the large, low, pathologic kidney.

April 29, the patient was discharged in the morning. A few hours after her arrival at home she was seized with violent colicky pains and then passed a stone. The urine was turbid, with many white blood corpuscles. It was alkaline, with a trace of albumin.

May 1, pyelotomy of the right kidney disclosed six calculi, from 1 to 2.25 cm. in diameter. Postoperative treatment included ureteral dilation and pelvic lavage every sixteen days.

May 12, there was abnormal density of the frontal sinuses and slight density of the left ethmoids. The antrums were normal.

May 18, a roentgenogram showed the urinary tract negative for stones.

July 27, a stone 3 by 2 mm. was seen in the right pelvis by roentgen-ray examination. At this time both ureters were catheterized with ease. Phenolsulphonephthalein appeared on the right in four minutes, and did not appear after twenty minutes on the left side. Urine from the right side was cloudy and profuse, and on the left side was very slight, with heavy cloudiness and precipitate. No bacteriologic record was made. The patient subsequently passed the stone following dilations.

September 18, a roentgenogram of the urinary tract was negative for stones. Both ureters were dilated to 13 F. and the pelvis was irrigated. The patient was placed on treatments at ten day intervals.

November 23, instrumentation was difficult on the left side. A wet specimen from the right kidney showed few white blood corpuscles and many red blood corpuscles; on the left, many pus cells, few red blood corpuscles; phenolsulphonephthalein on the right appeared in three minutes. There was no appearance on the left; a culture from the right kidney yielded *B. coli-communis*. The left yielded no growth.

11. Bumpus, H. C., Jr.: The Relation of Focal Infections to Diseases of the Urinary Tract, Ill. Clin. N. Am. 5:409 (Sept.) 1921.
12. Ochsner, A. J.: Removal of Renal Calculus from Pelvis of Floating Kidney, the Second Kidney Being Absent, S. Clin. N. Am. 2:593 (June) 1922.
13. Rovsing, T.: Ueber Diagnose und Behandlung der Nierensteine auf Grund 25 jähriger Erfahrungen, Ztschr. f. urol. Chir. 10:358, 1923.
14. Cantani, cited by Fletcher (Footnote 10).

The roentgenogram showed a stone in the lower portion of the right pelvis, the size of the end of one's thumb, and in the upper right calix there was a shadow the size of the terminal phalanx of one's little finger.

December 21, a culture of the kidney yielded 42,000 bacteria per cubic centimeter, with *B. coli-communis* predominating.

December 28, roentgenogram showed a very slight difference in location, but marked increase in size of stones.

Jan. 7, 1924, patient was admitted to the hospital. She had felt pain in the right kidney region for some time. The urine showed many pus cells, few red blood corpuscles and a marked trace of albumin.

The next day, pyelotomy was performed on the right side. The largest stone almost occluded the pelvis. The smaller stone was high up in the upper calix. They were composed of calcium phosphate with some ammonium magnesium phosphate. Post-operative treatment was given each sixteen days.

February 13, cultures from the right and left kidneys revealed *B. coli-communis*.

March 14, both ureters were catheterized with lavage of the pelvis. The catheters were left in position for four hours. A very small amount of pus was obtained from the left side. The urine from right was quite hazy. A culture yielded *B. coli-communis*, with more than 100,000 organisms per cubic centimeter.

March 24, treatments were continued, with all cultures showing *B. coli-communis* in varying numbers.

April 2, roentgen-ray examination showed the urinary tract negative for stones.

Case 11.—H. S., a man, aged 38, had experienced a swelling in the upper right abdomen at intervals for seven years. Appendectomy, performed four years before, brought no relief. A right nephrectomy was done one year before, yielding multiple stones and marked destruction of the kidney. The urine was very bloody and thick. A heavy pain radiated to the lower left quadrant. Pressure over the left ureter caused pain. There were red blood corpuscles in the urine and pus cells 100 to each high power field. Roentgen-ray examination showed a suspicion of left renal calculus. A pyelogram was not done because of fear of damage to the only kidney. Dilation of the ureter and lavage of the kidney pelvis every two weeks was done. Cultures from the left kidney repeatedly showed *B. coli-communis*, and microscopic examination showed large amounts of red blood corpuscles and pus.

April 6, 1923, roentgen-ray examination showed the left kidney somewhat enlarged, and the shadow suggested renal calculi. The patient passed a stone after every dilation.

May 16, ten days after the last treatment, a stone was passed. Since then the urine had been clear in the morning, turbid at noon and bloody at 5 p. m. The phenolsulphonephthalein function was good at all times.

May 18, pyelotomy disclosed a large elongated stone at the uretero pelvic junction. Sutures did not go through the wall into the pelvis.

July 7, roentgen-ray examination showed no stone. The left kidney was large and low.

Jan. 25, 1924, dilatation of the left ureter had continued since the last operation. Increased hematuria had been noticed since January 1. In the urine, albumin and many pus cells were found. A phenolsulphonephthalein test resulted in the return of 33 per cent. in two hours. There was no obstruction in the ureter. A culture yielded *B. coli-communis*. A roentgenogram showed a large stone, about 3 cm. long, apparently in the left kidney pelvis.

February 5, nephrotomy and pyelotomy were performed under paravertebral anesthesia. The wound in the kidney was closed with a piece of fat in the incision; another incision at the ureteropelvis junction disclosed two stones. The larger one measured 11 by 20 by 29 mm. and weighed 0.5 gm. The surfaces were rough, and the stones were composed of ammonium and magnesium phosphate.

February 26, roentgen-ray examination was negative. Indefinite blotches were seen, as in the January picture. After the last operation, dilation and irrigation were done every two weeks, and the catheter was allowed to remain in place for several hours. He felt and looked very much improved. Cultures at the times of treatment continued to yield either *B. coli-communis* or *B. proteus*.

April 28, roentgen-ray examination showed the urinary tract negative for stones.

Case 3.—M. W., a married woman, aged 32, with a child, aged 10 years living and well, was always ill. Roentgen-ray examination was done Dec. 12, 1923. The left catheter reached the level of the third lumbar vertebra and the right catheter the level of the second lumbar vertebra. The left kidney was low, and there was a large calculus, having an outline of calices and multiple calculi. A pyelogram, left, showed extensive destruction of the renal substance and complete loss of the outline of the pelvis. The urine contained red and white blood corpuscles, and was loaded with pus. Cystoscopy showed inflammation around the left orifice, a pea sized stone in the bladder, and cloudy urine from the left side. A pig injected with urine from the left side died in thirty days. No tubercle bacilli were found.

Pyelotomy, December 28, revealed the pelvis filled with stones; there was a flow of pus at the release of each stone. The pelvis was left open. A large branched stone was removed weighing 12.1 gm., composed of calcium phosphate. The patient was given acid sodium phosphate, 20 grains (13 gm.) before meals.

The patient passed a stone the size of No. 4 shot the day of her discharge from the hospital. She was treated by diet and medication, and observed by frequent urinalysis and by regular dilation of the ureters and lavage of kidney pelvis with 1:1,000 acriflavine. February 8, 1924, a culture of the left kidney yielded 350,000 organisms per cubic centimeter. *B. coli-communis* predominated.

April 17, a culture of the left kidney was sterile.

April 29, gram-negative capsulated bacilli were obtained from the left kidney. They were not members of the colon group.

In a roentgenogram made March 24, the right shadow was larger than the left. The left kidney shadow showed seven stones, the two upper ones very much simulating the location, appearance and relation of two stones in the original pictures made December 13, 1923.

CONCLUSIONS

I would urge a most thorough and conservative study of the details of calculus cases before deciding on nephrectomy as the operation of choice. In two recurrent cases in this series, nephrectomy had been done previous to their observation by us, one for calculi and one for hydronephrosis. In these two cases, large calculi in the remaining kidney have caused me to speculate on the possibility of at least partial restoration of function in the sacrificed kidney.

In summarizing these remarks, the following conclusions may be drawn:

1. Postoperative roentgenographic examination should be made as a routine before the patient leaves the hospital and at definite intervals thereafter.

2. Operative technic should include precautions against sutures acting as points of deposit for urinary salts at any point along the tract, as well as all known methods to guard against leftover calculi.

3. All cases should be relieved of obstruction or stasis arising from adhesions following previous laparotomies, trauma, anomalous vessels, or any condition causing pressure on the ureter.

4. The chemical composition of all removed calculi should be studied with the object in view of correcting faulty metabolism and urine reaction.

5. Most cases of obstruction and stasis may be corrected or helped by dilation of ureteral constrictions and kinks with indwelling bougies and catheters.

6. Infection should be definitely recognized as a factor in recurrence, and treated by routine lavage.

7. Foci of infection in the teeth, tonsils, prostate and sinuses should be sought for and remedied if present.

8. Conservatism should be practiced in considering nephrectomy, when there is a possibility of restoring function, particularly in cases with a history of or tendency to bilateral involvement.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. DAY AND MARTIN, AND LAU

DR. DANIEL N. EISENDRATH, Chicago: Dr. Day spoke of the diverticula being weakened congenital spots plus obstruction. This does not explain all cases, particularly those in relatively young people. Here is a bladder from a boy of 24, who died of hematuria from multiple papillomas. The case was first seen by me at necropsy. There is a typical diverticulum located near the left ureter, where 80 per cent. occur. It is of great interest that Dr. Day reports finding the mucosa intact in the majority of cases. A method of excision of diverticula has been described by Dr. Geraghty, in which the mucous membrane alone is removed. This is much simpler than the older methods of complete removal, especially in the type found beneath the trigon. His technic for the hour-glass bladder is excellent; i. e., for large diverticula near the dome of the bladder. The cystogram does not always make the diagnosis. It is necessary to examine a case repeatedly and to allow some fluid to escape before taking the last picture, as well as to take one with an opaque catheter in the cavity before contrast fluid is injected. Dr. Day's idea of doing a cystectomy for multiple diverticula appeals to me greatly. Whether or not a sphincteric action takes place at the mouth of the diverticulum is important. If this is so it shows that our ordinary methods of trying to drain the bladder are of no value. Dr. Day's method of removal of the diverticulum first, followed by removal of the prostate, is the preferable one. Dr. Lau could follow only twenty-eight of fifty-three cases. It is very difficult to draw any conclusions from this small percentage. He had recurrence in about 10 per cent., which corresponds almost exactly with statistics from the Mayo Clinic and other clinics. We had hoped that with the introduction of the fluoroscope at the operating table, the percentage of recurrence would improve, but this is not the case. I think it makes no difference whether we perform a nephrotomy or a pyelotomy, not the old kind but the kind we all know of, for these stones will frequently continue to form in spite of all efforts. We should examine every renal calculus case for stricture of the ureter and for abnormal mobility, because both favor reformation. If a pyelitis persists or the renal pelvis and ureter remain dilated after operation on the passage of ureteral or renal calculi, the prognosis is not very good. I believe that we should not promise too much when advising an operation for renal calculus, because certain incontrollable factors may exist that favor recurrence. We should not operate unless the calculus interferes with renal function and causes a persistence of infection. The prognosis in soft phosphatic calculi, with coincident renal infection, is especially unfavorable for recurrence.

DR. ROBERT H. HERBST, Chicago: One of the most important points in the question of diverticula of the bladder is to differentiate between the retention diverticulum and the type that empties with the act of urination. In the past we have spent a good deal of time quibbling about the etiology of diverticula of the bladder, whether they are congenital or acquired, but this has little bearing on the relief of symptoms produced by this rather common condition. We do know that diverticula are frequently found associated with various types of urinary obstruction, and the important thing for us to determine is whether the diverticulum empties with the bladder or not. If not, then it must be removed before, at the time, or shortly after the obstruction is removed; otherwise urinary function will not be restored. Failure to remove retention diverticula complicating prostatic hypertrophy is one of the more common causes of poor urinary function following prostatectomy.

DR. B. A. THOMAS, Philadelphia: Apropos of Dr. Day's paper, I wish to report three very interesting complications of diverticula of the bladder. The first patient showed on cystoscopic examination a stone about 2 cm. in diameter, which looked easy for litholapaxy. This was done, the stone being readily grasped and crushed; but in attempting to crush the fragments further, I could feel them but was not able to seize them with the lithotrite, and realized, on the injection of fluid, that I had ruptured the bladder. Therefore, I did a cystotomy and found that the fragments had been pushed through a shallow diverticulum located on the right side of the base of the trigon, and lay in the rectovesical space. The peritoneum was then lifted from the upper and posterior surface of the bladder, pulled forward, the fragments removed, and the rent in the bladder repaired. The lesson taught in this case wbs that in a patient on whom litholapaxy is contemplated, one should move or lift the stone and look underneath it for the possible diverticulum, and if such is the case, refrain from lithotrity. In a second case, I found a carcinoma originating in a diverticulum, indicating that excision of the diverticulum should be practiced if at all possible in view of this possibility. In a third case, I found a benign tumor, a true papilloma, growing into the bladder from the interior of one of two bilateral homologously placed diverticula, about 2 cm. in diameter. This was readily destroyed by cystoscopic electrocoagulation, but three months later there was recurrence. Again, the papilloma was destroyed in a similar manner. The patient has shown no evidence of recurrence now for three years.

DR. P. E. MCCOWN, Indianapolis: I have a case of stone in the kidney and ureter which was rather interesting. There was a stone in the lower calix of the right kidney and a stone in the left ureter, lying just above the bladder. I attempted dilation of the left ureteral orifice, with severe hemorrhage. The second time the patient bled for five days. I did a ureterotomy, removed a stone the size of a large cherry, and sent the patient home to get rid of some bad teeth. He returned in May, and a primary roentgenogram showed the stone in its proper location in the calix of the right kidney. He returned home because of business pressure but came back in December, and at that time had had another attack of colic on the right side. In the meantime he had had all of his bad teeth removed, except one which supported a bridge. When he returned in December he had had severe colic on the right side and we then found two stones, one in the pelvic area and another in the lower calix. I told him he was making stones faster than we could remove them. We went over his case again and found that he still had an infected tooth, which was removed. The laryngologist examined him and found the tonsils involved. He had the tonsils removed and returned again in January. During this interval he had been passing numerous stones. On examination of a new roentgenogram we found an apparent disappearance of the shadow in the region of the right lower calix, with the exception of two or three small ones in the lower part of the calix. We finally concluded that after a sharp colic he had evacuated the stone from the lower calix into the pelvis in November; but, as he still had his focal infection, it immediately filled up with the calcareous deposit, mixed with the adhesive material that holds it. As his stone making had ceased, we did a pyelolithotomy and removed the stones from the right pelvis. I think this bears out the theory of Rosenow and Meisser regarding the infectious nature of some of these stone cases.

DR. VICTOR D. LESPINASSE, Chicago: There are a few points about diverticula that we should bear in mind. First, the diverticula themselves do not necessarily need any treatment. I think the point brought out by Dr. Herbst about differentiating between the retention diverticula and the nonretention type is important. The nonretention does not need any treatment, but the other does. In all diverticula cases, my plan is to examine the bladder outlet very carefully to see whether there is a bar or any type of obstruction; if that is found and removed, the symptoms are relieved. Regarding the sphincteric action, in the case of one of the first diverticula I ever encountered, I put my finger in the bladder and the first thing I knew something squeezed it. On examination, I found I had put my finger into a diverticulum opening, and the wall had closed down on it. I think there is no

occasion, unless one can see definite retention in the diverticula, to remove them.

Dr. Herman L. Kretschmer, Chicago: There seems to me to be just one thing to do—to resect the diverticula and to transplant the ureter. When diverticula are present there is obstruction at the outlet of the bladder. If we look for obstruction we shall find it. We do not accomplish much by simply removing the diverticula.

Dr. Robert V. Day, Los Angeles: As to the work done by Drs. Rosenow, Meisser and Bumpus, the infections produced have all been by organisms of the coccus type—mostly streptococci. The probable explanation is that the particular types producing stone were strains that were extremely active in urease production and consequent ammoniacal decomposition. As to the etiology of diverticula: I was careful not to say that all diverticula were acquired, but did say nearly all. In the young man we do not always discover obstruction. We have not found it necessary to excise all our diverticula, but I think that in some we shall have to do so later.

Dr. Frederick T. Lau, New York: As to the nature of the organism found in the infection, as brought out by Dr. Day, my paper in its entirety will show the exact organism found in each individual case in which we took cultures. It would seem that the case reported by Dr. McCown is not unlike my first case. Perhaps, for lack of a better classification, we shall have to call these cases "chronic stone formers," despite all our knowledge and vigilant treatment. We know that infection produces a colloidal irregularity in the urine, which predisposes to a precipitation of urinary salts. This precipitation, even though it be very slight, acts as a nucleus for the formation of a stone. Any nucleus constantly extracts additional salts from the passing urine. When the fluoroscope may help us detect stones, small stone particles covered with blood fibrin at the time of operation could quite easily escape detection. A small, flexible photographic film can be used and developed before completion of the operation.

RECOVERY FROM SUBACUTE INFECTIVE ENDOCARDITIS FOLLOWING GENTIAN VIOLET THERAPY*

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The prognosis in subacute infective endocarditis has in the past been regarded as extremely gloomy. Lenhartz,[1] after an experience of many years, found only one patient who recovered. Libman[2] has repeatedly emphasized the great seriousness of this disease, and Barker[3] states that every one of his thirty patients died.

A patient with subacute infective endocarditis made such a prompt recovery following the intravenous use of gentian violet that the case seemed worthy of record.

A colored woman, aged 25, admitted to the Bell Memorial Hospital, March 6, 1924, complained of shortness of breath and pain in the chest. Her family history was negative. The patient had had much trouble with her teeth and also frequent attacks of tonsillitis. Her history otherwise was negative.

Five months before admission, the patient had a profuse menorrhagia and went to bed on the advice of her physician. There was some flow for nearly four weeks. About three months before admission, she began to have substernal pain, which radiated to the left side of the chest. She became very short of breath, and began having fever and night sweats. During the month before admission, she had occasional attacks of vomiting, had no appetite and felt extremely weak.

The patient was very anemic. The chest was normal. Examination of the heart showed a blowing systolic murmur, best heard at the apex but well transmitted over the heart. There were no petechiae. The spleen was not felt.

The urine was normal. The blood examination showed red blood corpuscles, 3,320,000; white blood corpuscles, 3,650; hemoglobin, 32 per cent. The white blood count varied from this very low figure to 9,000 during admission. The patient's temperature on admission was 100 F., and during her stay in the hospital it varied from 98 to 101.4 F.

Blood cultures were taken, March 7 and 12, and at the end of seventy-two hours a nonhemolytic streptococcus of the *S. viridans* type was recovered in pure culture.

The patient had a positive Wassermann reaction, and for this reason was given potassium iodid in gradually increasing doses, for a period of ten days. At the end of this time, there was no change in the patient's condition and she was still showing fever. The blood culture, March 17, showed the streptococcus still present in the blood stream. The same day, the patient was given intravenously 5 mg. of gentian violet per kilogram of body weight, in a 1:500 aqueous solution. Forty-eight hours after the first injection, the temperature was normal. A blood culture was taken and found to be sterile, and the patient was given another injection of gentian violet intravenously forty-eight hours later. A second blood culture was also negative, and the two subsequent blood cultures, while the patient was in the hospital, showed no growth. The patient received, in all, four intravenous injections of gentian violet.

The patient was discharged from the hospital, April 12, 1924, showing very marked improvement. The blood count was: red blood corpuscles, 4,500,000; white blood corpuscles, 7,000, and hemoglobin, 67 per cent.

Since her discharge from the hospital, she has had three negative blood cultures. At the last examination, seven months after her discharge, she was in good health, although a loud systolic murmur was still audible at the apex of the heart. During one of the intravenous injections of gentian violet, the dyestuff extravasated into the tissues and set up a necrosis, which produced some sloughing and considerable discomfort to the patient. This cleared up, however, without any severe complications.

The prompt response to the injections of gentian violet in this patient was very striking. We are not willing to state definitely that the cure was brought about by the dyestuff, although it seems quite probable.

Hofer,[4] in 1915, studied the effect of malachite green and crystal violet on experimental guinea-pig septicemia and found a marked bactericidal effect. Young and Hill[5] have reported three cases of *Staphylococcus aureus* bacteremia in which recovery followed intravenous injections of gentian violet.

It must be remembered, however, that septicemias produced by *Streptococcus viridans* and also by *Streptococcus hemolyticus* may clear up without intravenous therapy. Warren and Herrick,[6] in 1916, reported thirty-nine cases of *Staphylococcus aureus* bacteremia with fourteen recoveries, forty cases of *Streptococcus viridans* bacteremia with ten recoveries, and thirty-one cases of *Streptococcus hemolyticus* bacteremia, with seven recoveries.

In 1915, Oille, Detweiler and Graham[7] reported a series of patients with *Streptococcus viridans* endocarditis, who recovered. In 1924, they[8] gave a further

* From the Department of Internal Medicine, University of Kansas School of Medicine.

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2. Libman, E., and Celler, H. L.: Etiology of Subacute Infective Endocarditis, Am. J. M. Sc. 166:516-527, 1918.
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4. Hofer, Gustav: Ueber die Wirkung einiger Anilinfarbstoffe (Malachitgrün und Kristall violett) auf experimentell erzeugte Septikämie bei Tieren, Mitt. a. d. Grenzgeb. d. Med. u. Chir. 28:892, 1914-1915.
5. Young, H. H., and Hill, Justina M.: Treatment of Septicemia and Local Infections by Mercurochrome-220 Soluble and by Gentian Violet, J. A. M. A. 82:689 (March 1), 1924.
6. Warren, Mortimer, and Herrick, W. W.: Analysis of One Hundred and Thirty-Four Cases of Bacteriemia, Am. J. M. Sc. 151:556 (April), 1916.
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8. Graham, Duncan; Oille, J. A., and Detweiler, H. K.: Further Report on Patients Who Recovered from Subacute Bacterial Endocarditis, J. A. M. A. 82:1721 (May 24) 1924.

report on this group of patients, twenty-three in number, of whom twenty were alive. Miller[9] saw four patients with *Streptococcus viridans* endocarditis, who recovered, and Libman[9] states that he had observed at least eight cases of subacute bacterial endocarditis in which recovery ensued.

Improved methods of taking blood cultures may account in part for some of these results. In this patient, the streptococcus grew very feebly on blood agar plates, but grew vigorously in glucose brain broth. The latter medium seems to be especially adapted for growing streptococci, and the more extensively it is used the higher, in all probability, will be the percentage of positive blood cultures in suspected cases.

Our patient obviously did not have a very overwhelming infection, and there was no evidence of embolic complications. The prompt response to intravenous therapy, however, suggests the further trial of gentian violet in patients presenting a more malignant picture.

SERUM PROPHYLAXIS OF EPIDEMIC PAROTITIS*

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It is generally conceded that epidemic parotitis is not a severe disease in its typical form. In most cases, especially in children, the disease evolutes without serious complications and without mortality. This malady is not, however, always so mild, and in certain epidemics has been known to assume a malignant form. In the usual case the main complication is orchitis, and this is almost entirely limited to adult patients. It is a most painful condition, however, and, besides prolonging the duration of the acute attack for a week or two, may be followed by atrophic changes in the involved glands. Acute ovarian inflammation may occur in the female, but far more uncommonly than orchitis in the male. Recently, much attention has been drawn to the occurrence of meningitis as a complication. As a matter of fact, mental disturbances and delirium are not unusual in patients with mumps orchitis. Albuminuria has been frequently noted, and among the very rare complications are acute nephritis, pancreatitis, endocarditis, pericarditis, osteomyelitis, edema of the larynx, parotid abscess and psychoses of various types.

It is not so much, however, from the gravity or, indeed, frequency of the complications, excepting orchitis, as from the standpoint of morbidity that the value of a prophylaxis is to be judged. In institutions for children, outbreaks of this disease necessitate quarantine regulations that may entail considerable inconvenience. In aggregations of adolescents and adult males of all types, as, for example, in colleges and army cantonments, the daily routine of the personnel may be seriously hindered for a period of weeks or even months, with a subsequent loss of a total of valuable time to the individual and to the aggregation as a whole. For all these reasons a prophylactic therapy may have some foundation of practical value under certain conditions, especially if it is subsequently shown that such a means of immunization enables us to prevent the most frequent complication; namely, orchitis.

In two small exposed groups of children (A and B), in a contagious disease hospital, we first attempted convalescent serum immunization as a protective measure against the disease. The protection afforded, although the exposure was close and the contact intimate, has been complete in this small series of cases. The results gave reason to believe that the convalescent serum prophylaxis may be just as applicable to this disease as it is to measles. I considered that this method of serum prophylaxis in epidemic parotitis was original until a reference to an attempt along the same line by Hess[1] in 1916 was found. Hess used whole blood instead of serum, and carried out his study in an institution for the care of children in New York City, where an outbreak of mumps occurred. Within a period of one month after the epidemic began, forty cases had developed. The immunization of twenty of the exposed susceptibles was then carried on by the injection of from 6 to 8 c.c. of whole blood. The blood was obtained from donors who fell into three groups according to the time of the disease when the blood was taken. In the first group were four children who were just recovering from mumps; in the second were ten children who had recovered from the disease ten days previously, and in the third, six children who had mumps from one to two years before. All the patients immunized were protected, and the epidemic was checked.

Summary of Cases in Which Convalescent Mumps Serum Was Injected

	Group A	Group B	Group C	Group D	Group E	Group F	Summary
Date exposed	2/28/24	2/28/24	3/29/24	3/29/24	3/28/24	4/27/24	
Date immunized	3/ 4/24	3/ 4/24	4/ 2/24	4/ 2/24	4/ 3/24	5/ 2/24	
Amount of serum	3 c.c.	4 c.c.	3-4 c.c.	4 c.c.	2.5-3 c.c.	2.5 c.c.	3-4 c.c.
Number of persons exposed	7	8	10	6	21	14	61
Number of patients infected	7	8	10	6	21	14	61
Number of patients in whom study of immunity was completed*	7	8	10	4	20	12	70
Number of patients developing epidemic parotitis	0	0	0	0	0	1	1
Day of disease convalescent blood was obtained from donors	10	10	14	14	14, 10	14, 10	10-10

* The result in eleven cases in which the study of immunity was not completed could not be determined owing to the early discharge of the patients from the hospital.

Our series of cases at the Kingston Avenue Hospital comprised six groups of patients, and occurred at different periods and in different wards.

Group A was composed of ten children with German measles isolated in a small cottage, who had been removed to the hospital from an institution in which a simultaneous outbreak of epidemic parotitis was occurring. One child, J. S., admitted, February 22, developed mumps, February 28. Of the nine children exposed, seven had no history of a previous attack. Each susceptible was given 3 c.c. of convalescent serum subcutaneously, March 4, the sixth day after exposure. No secondary cases developed, although the children were up and around playing, and the sick child was not isolated.

9. In discussion on Kilgore, E. S. Arrythmia of Auricular Fibrillation, abstr., J. A. M. A. 82:1723 (May 24) 1924.

* From the Kingston Avenue Hospital.

1. Hess, A. F.: A Protective Therapy for Mumps, Am. J. Dis. Child. 10:98 (Aug.) 1915.

In Group B, composed of four children with German measles segregated in a small cottage, one child, I. L., developed epidemic parotitis, February 29. Each of the three other children, none of whom had a history of the disease, were immunized with 4 c.c. of convalescent serum, March 4. No secondary cases followed. The serum used for the immunization of these two groups of patients was obtained from an adult patient 26 years of age, who was taken sick, February 5, and admitted to the hospital, February 10, with bilateral parotitis and orchitis; the temperature reached normal, February 13; the blood was removed, February 15, when the parotid swelling and the pain and tumefaction of the testes had practically subsided.

Groups C and D occurred in a diphtheria service in wards in which an outbreak of epidemic parotitis had developed. The latter was so pronounced that in one of the wards in which immunization was not practiced, there occurred seven cases in the open portion of the ward and three of the nurses developed the disease.

Group C consisted of eighteen children who were exposed by D. N., who developed mumps, March 28. The entire ward was immunized with convalescent mumps serum, April 2, in dosage of from 2 to 3 c.c. No further cases developed. The serum used for the immunization in this instance was obtained from an adult donor with uncomplicated mumps, who was bled on the fourteenth day of the disease.

Group D consisted of eight children who were exposed by two little patients, J. M. and M. S., who developed symptoms, March 30 and April 2, respectively. One of the exposed children had been previously immunized. The other seven were injected with 3 c.c. of convalescent serum, from the same donor used in Group C, April 2. No further cases developed, but four of the immunized patients were discharged before the incubation period was over.

Groups E and F occurred in two different measles pavilions. Group E was composed of thirty-five patients exposed through a nurse, M. F., who developed mumps, March 28. Of these thirty-five patients, in four there was a previous history of the disease. The remaining thirty-one patients were immunized, April 3, with from 2.5 to 3 c.c. of convalescent serum obtained from an adult donor on the fourteenth day of the disease. No further cases developed, but five were discharged too soon after immunization to be sure protection was complete.

Group F was composed of fourteen patients exposed through a child, E. N., who developed mumps, April 27. These children were injected with 2.5 c.c. of serum from two adult donors on the sixteenth and twentieth days of their disease. The discharge of two children occurred too soon to determine the protective value of the injection, one patient developed a mild parotitis after discharge, and no further cases appeared in the eleven remaining patients.

SUMMARY

Six groups of children, comprising eighty-one in all, exposed to epidemic parotitis at different times, were immunized with an average injection of 3 c.c. of convalescent serum within a period varying from the first to the sixth day after exposure. Only one of these patients developed mumps; but eleven were discharged from observation before their possible incubation period was over, and the results in these eleven immunized patients are not known. The remaining sixty-nine showed no signs of the disease. The convalescent blood used for this immunization was taken from healthy adult donors, who were Wassermann negative and clinically free from any active signs of tuberculosis, between the extremes of the tenth and twentieth day, usually on the fourteenth or sixteenth day of their disease.

CONCLUSIONS

1. Convalescent parotitis serum seems to possess the property of immunizing exposed susceptible individuals.
2. It should be administered before the seventh day after exposure to afford complete immunity.
3. The dosage should be between 2 and 4 c.c.
4. The possible value of the method of modifying the disease by injecting the serum late in the incubation and in somewhat large doses deserves thought, especially from the standpoint of prevention of orchitis.

Clinical Notes, Suggestions, and New Instruments

A CASE OF HYPERSENSITIVENESS TO CARBON TETRACHLORID *

HARDEN F. TAYLOR, NEW YORK

As a result of pioneer work by Hall,[1] carbon tetrachlorid has recently come into extensive use for the destruction of the hookworm and other intestinal parasites, first in dogs, and then in man. While in the vast majority of cases no untoward effects seemed to result from the use of carbon tetrachlorid, in a few cases the animals died, even when the chemical was highly purified. The causes of these unfavorable results have been under investigation by Lamson and his collaborators,[2] who report that the presence of fats or alcohol in the subject's stomach, or the presence of certain other parasitic worms, may complicate the effects of carbon tetrachlorid, and be the cause of the casualties. A few exceedingly disagreeable experiences that I have had suggest that hypersensitiveness to carbon tetrachlorid may be another, and perhaps the chief, cause of the trouble in unfavorable cases.

In 1917, I removed from my hands some bituminous belt-dressing which was used to prevent the slipping of a belt on a laboratory motor, by washing the hands with carbon tetrachlorid. By night, the hands were swollen to the wrists and itched so intensely that sleep was impossible. Next day, they were out of use entirely, swollen greatly and blistered. The blisters were not the surface blisters that result from a burn, but small, globular sacs originating deep in the skin, mostly never breaking at all. The hands could be used again in two or three days. The inside of the mouth was almost as if burned by hot soup. Afterward I was more careful about carbon tetrachlorid; but other poisonings followed the use of carbon tetrachlorid in the laboratory, where the hands were exposed to the vapors of this chemical, reddening, itching and blisters developing in twenty-four hours.

I am also exceedingly hypersensitive to iodoform, having been seriously poisoned twice by it from iodoform gauze packing used in certain surgical operations. The effects were similar, in a general way, to those from carbon tetrachlorid, though not identical. The skin weeps intensely with a yellow, watery serum, which dries to form hard crusts, and the poisoning extends to parts of the body other than that in contact with the poison.

Derivation of both these poisons from methane is suggestive. Probably chloroform would likewise be poisonous, though I have not tested its effects.

As a final check, before writing this note, I dropped a drop of carbon tetrachlorid on the back of my hand. In twenty four hours, a red, itchy spot was present, but no blisters.

* From the Research Laboratory, the Atlantic Coast Fisheries Company.

1. Hall, M. C.: The Use of Carbon Tetrachlorid for the Removal of Hookworms, J. A. M. A. 77:1641 (Nov. 19) 1921.
2. Lamson, P. D.; Gardner, G. H.; Gustafson, R. K.; Maire, E. D.; McLean, A. J., and Wells, H. S.: The Pharmacology and Toxicology of Carbon Tetrachloride, J. Pharmacol. & Exper. Therap. 20:215 (Nov.) 1922.

Special Article

MEDICAL EDUCATION AND MEDICAL SERVICE

I. THE SITUATION

WILLIAM ALLEN PUSEY, M.D.
CHICAGO

In my address to the House of Delegates,[1] I called attention to the serious difficulties in medical service that are developing under our present policy in medical education. But the subject is so large that a summary of it was all that was possible in that address. I am therefore returning to it here in order to consider more fully some of its most important aspects.

Twenty-five years ago, medical education was in a disorganized state. There had been no lack of honest effort in most institutions to live up to their responsibilities as best they could, but there was no dominating force of national extent that could effectively insist on what these responsibilities were and how they should be met. In this situation, the Association stepped in and assumed direction and, through the Council on Medical Education under the courageous leadership of Dr. Bevan, produced a revolution. The minimum requirements twenty-five years ago were, in effect, that the student should be 21 years old and have attended three years of medical school. In contrast with that condition we now have the following conditions: Entrance requirements include two years of college; the medical course is five years, including one year of hospital; schools have been reduced from approximately 160 to eighty; and the survivors have a realizing sense of the necessity for meeting adequately their responsibilities. There can be no doubt of the great service that has been performed in establishing medical education on a sound basis. But in our advance we have made medical education so costly, in time and money and sacrifices of a very important sort, that troubles in medical service are arising that demand our attention; for medical service—our usefulness as physicians to society as a whole—is, after all, our reason for existence and must be the chief object of our policies, as it is the standard by which our worth must be measured.

THE SITUATION IN THE CITIES

The difficulties in medical service in the cities are seen in the way our young men are seeking the special careers. The great expression of this fact is the way our present graduates show a preponderant tendency to go into the specialties. They are not going into general practice. The situation in the cities is not acute, because the supply of physicians of the older generation leaves for the present enough of that generation to meet the demands of general practice. But it is evident that, unless we can do something to change the trend, the time is not far distant when the problem of the general practitioner as we have always known him—the family doctor for the man of ordinary means—will be a serious one even in the cities.

Another expression of the fact is the new difficulties in getting men to fill official and government positions that would naturally be filled by medical men when they are available. We are now compelled to look outside the profession to fill many positions having to do with medicine. We are, for example, finding it necessary to get laymen for full-time secretaries of medical organizations. I am not opposing this as unsound policy—I think it is not unsound policy—but I am adducing it as evidence of the high price that is being set for its services by our newer generation.

THE JOURNAL had an editorial,[2] Aug. 7, 1920, on how "The higher educational qualifications . . . have resulted in multiplying the careers, aside from regular practice, which are now open for graduates in medicine"; and it instanced the Army and Navy and Public Health Service. In a personal letter, the Surgeon-General of the Public Health Service tells me that in the last few years it has become "impossible to secure candidates" for his service; and that the difficulty is a matter of "very vital importance" not only to his service but to that of the Army and Navy as well. Our present young men are above the price that administrative and official positions can pay.

In short, the evidence is accumulating that we are producing only a very costly sort of physician and are not now producing men to do the ordinary service of medicine for ordinary people in the cities or the country.

And who are these ordinary people? Let us assume, to be liberal, that they are all who do not pay federal income taxes; that those whose admitted annual income is above $2,000 are out of the class of ordinary people and have no problem presented to them by the rising cost of disease and injury. With about 25,000,000 potential income tax payers in the country, 6,662,126 paid in 1921. The ordinary people are certainly over half of our entire population, urban as well as rural; so that the question of medical service for ordinary people is the biggest problem we have.

THE SITUATION IN THE COUNTRY

The U. S. Census Bureau classes population in places of 2,500 or less as rural. In 1920 this rural population of the United States was 51,000,000, as against 54,000,000 urban. Medicine, then, is faced by the problem of furnishing medical service to 51,000,000 rural dwellers. This does not mean that these districts should get fifty-one of each 105 graduates in medicine (48 per cent.). A very large proportion of this rural population lies contiguous to towns and cities of more than 2,500 people, and this population is served by the urban doctors in these places. This, I would estimate roughly, will provide for one half of the rural population, leaving one half of it, or 25 per cent. of the entire population, to be taken care of by rural doctors. From rough estimates of this sort and from consideration of the former distribution of rural physicians, I should say that a distribution of from 20 to 25 per cent. of physicians would take care adequately of rural medical needs. Our rural medical problem, then, is not a problem of 50 million people but of from 20 to 25 million. It is still a problem of large proportions.

Strong evidence is accumulating of the impending, and in places actual, breakdown of our present form of rural medical service. I presented evidence on this subject that I had gotten from the entire country through the secretaries of the state medical societies, whom I asked, in substance, whether the older generation of physicians in the rural districts is being

1. Pusey, W. A.: The Trend in Medical and Nursing Services, J. A. M. A. 82:1960 (June 14) 1924.

2. Careers for Medical Men, Current Comment, J. A. M. A. 75:419 (Aug. 7) 1920.

sufficiently replaced to meet the future needs of these districts.

I received replies from thirty-four states (two replies, not included, did not answer the question) as follows:

Thirty secretaries of state societies answered my question, "No."

Four secretaries of state societies (Florida, Minnesota, North Carolina and Rhode Island, the latter having no rural districts) answered, "Yes."

This ominous state of affairs is confirmed by another, almost identical, investigation of which I did not know at the time of my address and which used perhaps a better source of information. This investigation was made by the Committee on Medical Service of the Conference of State and Provincial Health Authorities of North America, Dr. Matthias Nicol, Jr., deputy commissioner of public health, New York, chairman.[3] The substance of their inquiry was practically the same as mine, and the result was almost identical. I think no stronger confirmatory evidence could be asked of the accuracy of the information that we separately received.

This committee addressed a letter of inquiry to *state health officers;* my inquiry was addressed to the *secretaries of the state medical societies.*

The result of their inquiry was as follows:

They received replies from thirty-six states:

Thirty-one were to the effect that the situation was not being met.

Five states "seemed to be satisfied with the conditions."

In one of these states (Minnesota), which was one of my four negative states, this committee indicated that in its opinion the statistics to the effect that the situation was being adequately met were at least doubtful as regards the smaller districts of the state.

The situation which these two investigations revealed can hardly be overstated. These independent reports from different sources show that medical practitioners in the country are not, in the opinion of these state officers, being replaced in approximately 90 per cent. of the states. The importance of these findings would not be diminished, if there were now no rural shortage whatever, for they are clear evidence of an impending shortage that is inevitable if the present trend continues. If this condition of affairs should continue for a generation, it would mean that the rural districts would be without competent medical service. That is the inevitable conclusion that must be drawn from the facts. If such a deplorable situation does not result, it will be because something is done in some way to change the trend of affairs. It is my hope that we shall come to a realization of the logic of the situation soon enough to prevent this result. If we do not, I have no doubt that it will be prevented in some other way, for the country is not going to give up having its physicians.

This committee expressed the opinion that "the most important problem in the field of medical practice which today confronts the people of the United States is that of medical service to the inhabitants of the rural districts."

They summarize their conclusions as follows:

1. There is a universal tendency for physicians to abandon rural districts in favor of the cities.

2. The number of those remaining belong in a very large proportion of cases to the older generations.

3. There is little or no tendency for recent graduates to seek practice outside the large centers of population.

4. In hundreds of rural districts, medical care is most inadequate or absolutely lacking.

Replies from thirty of the states indicate that the condition of affairs differs only in degree, varying from serious to desperate.

Some of their findings are as follows:

Kansas.—In one county of 6,182 people there are but two physicians, one aged 47 and the other aged 52. In a list of twelve counties with twenty physicians, only one is a recent graduate.

Maine.—There are from twelve to fifteen places in which the need of a physician is great.

Mississippi.—Many counties with a population of from 20,000 to 30,000 have physicians only in the large centers, leaving the interior without a single resident physician. In the whole state the proportion of physicians to population is 1 to 1,120. Death certificates with "no attending physician" signed are on the increase.

Kentucky.—Forty counties are without adequate medical service.

Louisiana.—In one county, the ratio of physicians to population is 1 to 1,385, and only one physician has been in practice less than ten years.

Montana.—Several large counties have but one physician. A bonus of $100 a month offered in one county has not attracted a physician.

Nebraska.—One county with a population of 1,433 is without a physician.

New Jersey.—Sussex County, which formerly had one or two physicians, now has none.

New Mexico.—The ratio of physicians to population is 1 to 2,000.

North Carolina.—This state, which gave a report of "Yes" to my inquiry, replied that there are fewer physicians to population than any state in the Union, with possibly one or two exceptions.

North Dakota.—Some counties have no physicians; others only one or two.

Pennsylvania.—In York County, outside the city of York, there is a rural population of 100,000 to be served by thirty-seven physicians.

Tennessee.—There are counties of 7,000 or 8,000 with not more than four physicians.

Vermont.—Out of a total of 248 towns, 102 are without physicians. A number of these towns formerly supported from one to three or four.

Virginia.—In the rural counties, the ratio of physicians to population is 1 to 3,370 people.

Washington.—No physicians in the rural counties have been in practice less than ten years. There is an entire absence of medical service in a few counties.

West Virginia.—One county with a population of 11,713 has six physicians—three over 70 years old. Two of the six have been in practice fifteen and nineteen years, respectively, and the other four, twenty-five years or more. In another West Virginia county of 9,600 population there are five physicians, in practice from twelve to thirty-three years.

Wisconsin.—The condition is said to be serious. One county with a population of 3,646 has one physician. Another with 10,462 has three.

New York.—Here a careful survey has been recently made, and Governor Smith recently called a conference to consider the subject. There are areas of several hundred square miles with 1,500 or more population with not a single resident physician. In one prosperous agricultural county the average time since graduation of the physicians in practice is twenty-seven and one-half years. During the last ten years, practically no physicians have entered the county to practice.

3. Report, 1923, p. 31.

The foregoing comments are from the report of this committee. The comments that I have received in response to my general inquiry are to the same effect:

Kansas.—"In our state it is seldom that a graduate from a Class A school ever locates in a small town."—Hassig, 1923.

Virginia.—"Every day or two we receive a request from some rural section for help in securing a doctor. We have a list in our office of more than 150 country districts where people have written."—Williams.

New York.—"Judging from letters received at this office, there is a serious lack of physicians in rural districts."—B. R. Rickards, assistant to deputy commissioner of health, New York.

There was general agreement (at a conference at Albany, Dec. 20, 1923, called by Governor Smith) as to the inadequacy of medical service in certain rural sections of the state.

"I find that a great number of the smaller places are without doctors."—L. D. Baldwin, assistant to the secretary of the Medical Society of the State of New York.

California.—There has been, I believe, more than one contention that the problem does not exist there. The secretary of the state society, Dr. Pope, reports to me, however, that she took one class of recent graduates at random, that of 1917. Out of thirty-nine graduates, location known, twenty are in San Francisco, six in Berkeley and Oakland; only four of the thirty-nine have gone to smaller towns.

Alabama.—"Recent graduates in medicine are not locating, to any great extent, in the smaller towns of Alabama and not in sufficient numbers to supply the needs that the country districts will have for doctors after the present generation of older men has disappeared."—S. W. Welch, secretary.

Colorado.—"Of 105 graduates, from 1916 to 1922, inclusive, fourteen, or a little less than 14 per cent., were in smaller towns."—Charles M. Meader, dean, University of Colorado School of Medicine.

The situation is not confined to any part of the country. States that think they are getting along all right, according to my report, are Florida, North Carolina, Minnesota, Rhode Island and, possibly, Nebraska. The trouble is reported to be the same in about 90 per cent. of the states, whether they are North, South, East or West; old or young, thickly or sparsely populated. It is not simply a problem of the Southern mountains or the Western plains.

Any one who will give even casual attention, as I have done, to current news, whether medical or general, will find all sorts of confirmatory evidence of these facts. For example:

New Hampshire.—Of 235 towns, ninety, that is, 38.5 per cent., have no physicians. They have, however, a total population of 41,000 people and 9.5 per cent. of the total population of the state.—Transactions, New Hampshire Medical Society, 1923, p. 28.

Maryland.—"It may be necessary to advertise for rural practitioners in Maryland."—J. S. Fulton, state health commissioner, in news item.[4]

West Virginia.—The pressing demand for physicians who will live and practice in rural communities is the most important problem concerning West Virginia, according to the authorities of the University of West Virginia School of Medicine. Summerville, seat of Nicholas County, has no physician; Clay County has only one for the inhabitants of 332 square miles.—Press dispatch, May 25, 1921.

Ohio.—Fifty-eight counties show a decline for the biennium ending Dec. 21, 1922; twenty-two, a gain, and eight, no change. The decline in fifty-eight counties is further evidence of the reduction of the number of physicians serving rural areas. Seventy-five per cent of the recent graduates of Ohio medical schools are residents of the seven largest cities, which represent 40 per cent. of Ohio's population.—Martin, secretary, Ohio State Medical Society. That is, 60 per cent. of the population is getting only 25 per cent. of the physicians, and this 25 per cent. is taken chiefly by the many large towns in Ohio. How many physicians are going to the towns of 2,500 or less?

"The marked difference between city and country indicates that the country places are no longer receiving their proportion of young physicians."—C. E. Lively, assistant professor of rural sociology, Ohio State University.[5]

4. Rural Towns Need Physicians, J. A. M. A. 81:755 (Sept. 1) 1923.

AGE OF COUNTRY PHYSICIANS

Unescapable evidence of the developing shortage in rural practitioners is shown by the average age now of country physicians. It is, there seems every reason to conclude, above 50 years for the whole country.

J. E. Dildy,[6] chairman of the Section on Medicine of the State Medical Association of Texas, says: "The average age of the members of our county medical societies is nearly 52."

The average age in my native county, in Kentucky, is 52.6. The average age since graduation is 25.4 years.

A. T. McCormack, secretary of the state board of health, Kentucky, says that the average age in rural districts is 52 and increasing at the rate of eleven months a year.

G. L. Noyes,[7] dean of the University of Missouri School of Medicine, says that the average age of physicians in Boone County is about 57 years; that of lawyers and ministers, 42 years. There is evidence, he thinks, that in the rural districts the average age of physicians is about 60 years. (Incidentally, here, the age of lawyers and preachers as given by Noyes and the corresponding age of Boston physicians, given in the next paragraph by Gile, suggest that the depletion of rural districts of physicians is not simply an expression of a general trend toward the cities, as we try to maintain in explaining away medical education's responsibility for the rural shortage.)

J. M. Gile,[8] dean of Dartmouth Medical School, says that the average age of physicians in Boston is 44 years; in rural New Hampshire, 52 years.

The 1923 report of the Conference of Health Authorities gives the time since graduation as twenty-seven and one-half years (age, say, 52½ years) "in one typical . . . prosperous agricultural county" with a population of 3,700 in New York.

This age situation, then, is as wide as the United States. It is incontrovertible evidence of the following highly important facts:

1. Country practitioners now, as a rule, are relatively old men.

2. Young men are not to be found in the country in sufficient numbers to keep down the average; that is, young men are not going to the country in sufficient numbers to fill the vacancies.

Gile asks, "With this medical group in the country districts of New England, now past an average age of 50 years, where are we to look for their successors?" He asks further, in a way that ought to bring the condition home to us: "What would a manufacturer do if he found that his workmen showed an average age of 52 and that no new men were going into his employment, especially if to develop his employees it required a high school education and seven years of technical training?"

5. Lively, C. E.: The Rural Physician in Ohio, J. A. M. A. 79:1541 (Oct. 28) 1922.
6. Dildy, J. E.: Texas State J. Med. 20:272 (Sept.) 1924.
7. Noyes, G. L.: J. Missouri M. A. 18:420 (Dec.) 1921.
8. Gile, J. M.: Boston M. & S. J. 185:387 (Sept. 29) 1921.

In many parts of the country the people are already getting "medically helpless," to use the striking phrase of Samuel Hopkins Adams, who has been one of the Association's wisest and most valuable allies. They are running to all sorts of irregular practitioners. Nurses are taking on the functions of physicians, and in many places we are encouraging this. The worst aspect of the situation is in connection with infant care and childbirth. The *Bulletin* of the Public Health Commissioner of Kentucky, July, 1924, says, "In at least thirty-six counties, midwives had to be called in the majority of cases of childbirth. In Leslie County, 88 per cent. of the births during the last year were under the direction of midwives, and Breathitt, Knox, Jackson, Macgoffin and Cosley counties were close seconds in the case of midwives because of the lack of physicians."

The Children's Bureau of the United States Department of Labor,[9] as a result of studies of maternity care in six rural areas of four states, said that a vast area in the far Northwest, larger than Connecticut, was served by three registered physicians. Remoter parts of the country were entirely without medical service. In districts where roads were bad, more than one third of the families in a far Northwestern county were 20 miles or more from the nearest physician, ten being from 50 to 100 miles away. In a Southern county, more than one fourth were more than 10 miles away, and in another county 25 miles was not an uncommon distance. But inaccessibility was not measured in miles; many families attempted to do without a physician altogether, and in others the thought of one does not occur until the patient's condition becomes critical. In a Southern county, only sixty-eight of 160 women had a physician at their last confinement. In a Northern county, only eight out of sixty-six confinements had a physician, and in still another more than two thirds of the women did not have physicians when their babies were born.

The matter is getting into the public press constantly. Such widely distributed papers as the *Ladies' Home Journal* and the *Youth's Companion* have thought it worthy of their space. For example, Samuel Hopkins Adams,[10] in the paper that reaches every community in this country, whether it has physicians or not, says:

> Every state has its wide areas that are medically helpless and verging yearly toward a condition of further destitution, amounting to desperation.
>
> Two rural counties of Wisconsin report that less than one fifth of the mothers had any medical care or supervision during pregnancy.
>
> Agricultural Mississippi data show that about two fifths of the mothers had doctors at confinement. Midwifery is a growing problem all over the country. North Carolina has, it is estimated, more than 5,000 of these haphazard practitioners. Despairing of adequate rural attention from the regulars, the state of Pennsylvania proposes to accept the only practical substitute and increase the efficiency of midwives by special training. Trained and community nurses from all quarters constantly write in to official health departments requesting courses in obstetrics on the ground that in the outlying portions of their districts physicians cannot be obtained, or if they do take a case too often arrive after the crisis is over, imposing the responsibility on the insufficiently expert nurse. *Continental custom though it is, alien to our American habits of thought, the practice of substituting for the medical expert a local practical woman is spreading rapidly in the rural districts, whereas it used to be confined to the slums of large cities.*"

I have already cited the sinister change in the ratio of infant mortality in rural districts as compared with infant mortality in the cities. For the first time in the history of American vital statistics the country, with every advantage over the city for the rearing of babies except reliability of medical attendance, showed in 1921 a higher death rate for babies under 1 year of age. The shift appears sudden. In 1920 every state except two—New York and Oregon—had a lower rural than urban infant mortality rate.

To the survivors who grow into early childhood, the doctorless condition continues to be serious. No duty which the physician owes to and performs for the body politic is more important than the supervision of the growing child—to see that he or she enters into adult life without the handicaps common to unattended growth. Who is to take over this function if the local doctor leaves?

The foregoing is but part of the evidence that could be produced on the subject. Except the questionnaire that I sent out, the evidence here collected has been gotten without any systematic examination of the subject. The subject is a topic of investigation by medical societies, of official and other addresses, of conferences. It appears in medical journals in advertisements for a doctor in this community or that, in news notes, in telegrams to the public press, in offering voluntary subsidies and passing laws to allow towns to tax themselves for the support of a needed doctor. These things constitute a new experience for us.

The family physician is not being replaced in the city, and the country practitioner is disappearing. The small hospital, the trained nurse, the automobile—these, as Gile says, "materially lessen the work in many instances. But none of these things, nor all of them put together, overcome the menace of the passing of the country doctor." Repeating the question of Adams: Who is to take over the function of the family doctor in the cities and who is to replace the local doctor in the country? If we cannot produce, or by a course of monastic pride in medical education can prevent the production of doctors that will go into country practice, who is to take over the function of the country doctor of the older generation after he is gone? Will it be the self-developed incompetent without medical training; the quack or the various sort of irregulars and cultists that are sure to be allowed to flock into practice after short and useless courses; the nurse or the midwife—whether trained or untrained—or state medicine in some form or another of medical socialism?

Are we, with our eyes open to the obstetric situation as it is developing, ready to turn over childbirth in the rural districts to midwives? Could there be a more sobering matter for our consideration than that midwives are becoming the only reliance in childbirth of half of the community, in many parts of the country where the practice was hitherto unknown; that we are, in our following of European standards of medical education, reverting to European peasant conditions in the practice of midwifery in a very considerable part of our self-respecting population? Such facts cut right to the core of our duties in social service. They demand correction, if correction is within our power. They outweigh immeasurably any ideals of medical culture as such, if these ideals can be attained only at such sacrifice.

The situation is not imaginary. It is not the fantasy of a lot of alarmists. It is a fantasy only to those

9. Medical Aid in Rural Districts, J. A. M. A. 74: 1346 (May 8) 1920.
10. Adams, S. H.: Ladies Home Journal, February, 1924.

11. Throughout this article, italics are mine, unless otherwise noted.

who persuade themselves that it is a fantasy. It is a slowly accepted fact that has come to the observation of innumerable hard-headed practical men throughout the country, who were not hunting for it and have been puzzled at its occurrence. It is written in records that are convincing to any one who thoughtfully reads them. It is a fact that we must accept and, if it is in our power, remedy.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

CORPUS LUTEUM-L. & F. DESICCATED.—The fresh substance of the corpora lutea of the ovaries of the hog, dried and powdered without the addition of diluent or preservative.

Actions and Uses.—See general article, Ovary, New and Nonofficial Remedies, 1924, p. 220.

Dosage.—From 0.12 to 0.3 Gm. (2 to 5 grains).

Manufactured by Lehn & Fink, Inc., New York. U. S. patent 1,309,357 (July 8, 1919; expires 1936). No U. S. trademark.
Capsules Corpus Luteum-L. & F. Desiccated, 3 grains.
Capsules Corpus Luteum-L. & F. Desiccated, 5 grains.
Tablets Corpus Luteum-L. & F. Desiccated, 2 grains.
Tablets Corpus Luteum-L. & F. Desiccated, 3 grains.

The fresh substance of the corpora lutea of the ovaries of the hog are freed of extraneous matter and finely ground. The paste is spread on glass plates and dried in vacuo (15 mm.) at a temperature below 40 C.

Corpus luteum-L. & F. desiccated is a yellowish powder having a peculiar odor; partially soluble in water.

One part of corpus luteum-L. & F. desiccated represents approximately 3 parts of fresh substance.

OVARIAN SUBSTANCE-L. & F. DESICCATED.—The entire fresh ovary (including the corpora lutea) of the hog, freed of extraneous matter, dried and powdered without the addition of diluent or preservative.

Actions and Uses.—See general article, Ovary, New and Nonofficial Remedies, 1924, p. 220.

Dosage.—From 0.12 to 0.3 Gm. (2 to 5 grains).

Manufactured by Lehn & Fink, Inc., New York. U. S. patent 1,309,357 (July 8, 1919; expires 1936). No U. S. trademark.
Capsules Ovarian Substance-L. & F. Desiccated, 2 grains.
Capsules Ovarian Substance-L. & F. Desiccated, 5 grains.
Tablets Ovarian Substance-L. & F. Desiccated, 2 grains.
Tablets Ovarian Substance-L. & F. Desiccated, 5 grains.

The entire fresh ovaries (including the corpora lutea) of the hog freed of extraneous matter and finely ground. The paste is spread on glass plates and dried in vacuo (15 mm.) at a temperature not above 40 C.

Ovarian substance-L. & F. desiccated is a yellowish powder having a peculiar odor, partially soluble in water.

One part of ovarian substance-L. & F. desiccated represents approximately 6½ parts of the fresh gland.

OVARIAN RESIDUE-L. & F. DESICCATED.—The residue from the fresh ovary of the hog, after removal of the corpus luteum, dried and powdered without the addition of diluent or preservative.

Actions and Uses.—See general article, Ovary, New and Nonofficial Remedies, 1924, p. 220.

Dosage.—0.3 Gm. (5 grains), three times a day, to be increased if required.

Manufactured by Lehn & Fink, Inc., New York. U. S. patent 1,309,357 (July 8, 1919; expires 1936). No U. S. trademark.
Capsules Ovarian Residue-L. & F. Desiccated, 5 grains.
Tablets Ovarian Residue-L. & F. Desiccated, 2 grains.
Tablets Ovarian Residue-L. & F. Desiccated, 5 grains.

The fresh ovaries of the hog are freed from extraneous matter and the corpora lutea is removed. The residue is finely ground and the paste spread on glass plates and dried in vacuo (15 mm.) at 40 C.

Ovarian residue-L. & F. desiccated is a yellowish powder having a peculiar odor; partially soluble in water.

One part of ovarian residue-L. & F. desiccated represents approximately 5 parts of the fresh substance.

PROPOSOTE.—Creosote Phenylpropionate.—A condensation product of creosote and phenylpropionic acid. Proposote contains the equivalent of 50 per cent. of creosote.

Actions and Uses.—Proposote is not decomposed by the gastric fluids and passes the stomach practically unabsorbed. It is decomposed in the intestines and the components are chiefly eliminated through the kidneys; but it is claimed that a part of the liberated creosote is eliminated through the respiratory tract. Based on this latter elimination, the administration of proposote is claimed to be of value in bronchitis and in coughs due to bronchial infection. Animal experimentation and clinical experience tend to show that proposote causes less gastric or intestinal disturbance than creosote does.

Proposote is used for the same purposes for which creosote is administered.

Dosage.—For adults, 0.65 Cc. (10 minims) three times a day. For children, 0.3 Cc. (5 minims) once or twice a day. Proposote is supplied in the form of capsules only.

Manufactured by Parke, Davis and Co., Detroit. No U. S. patent. U. S. trademark 176,953.
Proposote Capsules, 5 minims.
Proposote Capsules, 10 minims.

Proposote is prepared by treating phenylpropionic acid with creosote in the presence of phosphorus oxychloride and purification by treatment with dilute alkali solution and extraction with benzin.

Proposote is an amber colored oily liquid, having a characteristic odor resembling creosote and a slightly bitter taste. It is insoluble in water, soluble in alcohol, ether and fatty oils. The boiling point of proposote is above 360 C.; its specific gravity at 25 C. is 1.10.

Treat 5 Gm. of proposote with 4 Gm. sodium hydroxide and 20 Cc. of water; heat on a steam bath until saponification is complete (1 to 2 hours). 5 Cc. of alcohol being added to facilitate saponification; separate the aqueous solution and dilute it to 100 Cc.; acidify with 10 per c ent. sulphuric acid and separate the liberated oil. Concentrate the aqueous filtrate and allow it to cool; fine needles of hydrocinnamic acid separate.

Dissolve 1 Cc. of proposote in 25 Cc. of neutral alcohol and titrate with tenth-normal sodium hydroxide, using methyl red as indicator. Each Cc. of alkali equals 1.5 per cent. of acid calculated as phenylpropionic acid. Not more than 0.1 per cent. is present.

Dissolve 1 Cc. of proposote in 16 Cc. of alcohol; transfer 1 Cc. of this solution to 25 Cc. of water and add 2 drops of ferric chloride solution; no brown color appears within five minutes (*limit of creosote*).

Ignite 2 Cc. of proposote; the ash is not more than 0.1 per cent.

RADIUM CHLORIDE-STANDARD CHEMICAL CO. (See New and Nonofficial Remedies, 1924, p. 277).

The following dosage forms have been accepted:

Standard Radium Solution for Intravenous Injection, 5 micrograms Ra: Each ampule containing radium chloride equivalent to 5 micrograms of radium element in physiological solution of sodium chloride, 2 Cc.

Standard Radium Solution for Intravenous Injection, 10 micrograms Ra: Each ampule contains radium chloride equivalent to 10 micrograms of radium element in physiological solution of sodium chloride, 2 Cc.

Standard Radium Solution for Intravenous Injection, 25 micrograms Ra: Each ampule contains radium chloride equivalent to 25 micrograms of radium element in physiological solution of sodium chloride, 2 Cc.

ILETIN (INSULIN-LILLY) (See New and Nonofficial Remedies, 1924, p. 152).

The following dosage forms have been accepted:

Iletin (Insulin-Lilly) U-10, 10 Cc.: Each Cc. contains 10 units.
Iletin (Insulin-Lilly) U-20, 10 Cc.: Each Cc. contains 20 units.
Iletin (Insulin-Lilly) U-40, 10 Cc.: Each Cc. contains 40 units.

TINCTURE DIGITALIS PURIFIED (FAT FREE)-S. and D.—A fat-free tincture of digitalis corresponding in strength to tincture of digitalis- U. S. P., containing 45 per cent. of alcohol. It is standardized by the one hour frog method of the U. S. Pharmacopeia.

Actions and Uses.—The same as those of digitalis. Tincture digitalis purified (fat free)-S. and D. was introduced at a time when the "fat" of digitalis was believed to cause gastric disturbances. At present this claim of superiority is not tenable and the preparation is sold simply as a standardized tincture of digitalis.

Dosage.—From 0.3 to 1 Cc. (5 to 15 minims).

Manufactured by Sharp and Dohme, Baltimore. No U. S. patent or trademark.

Ticture digitalis purified (fat free)-S. and D. is prepared by percolating digitalis with 50 per cent. alcohol, reducing the percolate in vacuo to a soft extract. This extract is washed with several portions of cold 94 per cent. alcohol, and to the combined washings is added distilled water in sufficient quantity to make the finished product contain 45 per cent. alcohol. It is then filtered and standardized.

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SATURDAY, JANUARY 24, 1925

OYSTERS AND TYPHOID

There is no doubt that oysters and other shellfish grown or temporarily placed for "fattening" in sewage-polluted water may be the vehicle of typhoid infection. The first typhoid outbreak in the United States surely traced to this source occurred among the students in Wesleyan University, Middletown, Connecticut, in 1894, and was described by the elder Conn. Since that time a number of more or less circumscribed typhoid outbreaks have been attributed to oyster-borne infection. Among the best known are those at Atlantic City, N. J., 1902; Lawrence, Long Island, N. Y., 1904; Goshen, N. Y., 1911; Binghamton and other New York municipalities, 1916. In the nature of the case, the reported outbreaks can hardly represent more than a small fraction of the total oyster-borne typhoid, since the wide and irregular distribution of the produce of a particular oyster bed and other epidemiologic difficulties often interfere with the certain recognition of this source of infection. With the great typhoid shrinkage, however, that has occurred in this country in consequence of general water purification and milk pasteurization, it is becoming easier to trace other modes and vehicles of infection. It can have escaped no one that typhoid cases due to carriers are detected much more commonly now than they were ten or fifteen years ago. This does not mean that carrier infection is now more common than formerly; it is probably less common. We are simply able to pursue our inquiries at a different level, so that sources of infection formerly submerged in a great wave of water-borne and milk-borne disease can now be seen rising as hidden reefs above the surface. What is true of carrier infection is probably true of oyster infection. There is almost certainly much less typhoid from oysters than there was fifteen years ago; but when it does occur, we are able to detect it more readily. It is perhaps significant that for some years health officers in Great Britain—where elimination of drinking-water infection antedated by some years that in the United States—have been led to attach great importance to shellfish infection as a factor in their own present-day typhoid. In London, in 1923, out of 173 typhoid cases in which information was obtained as to probable origin, fish or shellfish were held to have been at fault in fifty-nine instances, or more than a third of the total.

In the recent outbreaks of typhoid in New York and Chicago, which—at least in Chicago—have been attributed to oyster-borne infection, the evidence adduced seems reasonably convincing. The definite history of oyster eating in a number of cases, together with the implication of a particular shipment of oysters and particular eating places, combined with the age and sex incidence and the localization of cases among the well-to-do, are all facts that strengthen the presumption of oyster-borne disease. To these might have been added the circumstance that the seasonal incidence is quite in accord with the belief in oyster transmission. The recorded outbreaks in this country due to contaminated oysters have occurred mostly in the fall or early winter, after the usual late summer typhoid has subsided. This, of course, corresponds with the period when shellfish are marketed in abundance and is before the period when the hibernating cold-weather oysters, which are less subject to contamination, make their appearance.

It is evident that the disposal of sewage by dilution even in the Atlantic Ocean is not without its problems. In the neighborhood of New York and at other points, the situation is acute. Industrial wastes and house sewage are said to be "making the fine harbor of New York a cesspool." Sea bathing has become impossible in certain localities. One recent writer[1] asserts that unless present conditions are remedied, "in ten to fifteen years the greater part of the eastern United States will be cradled in a septic tank." The future of the oyster is part of this general problem. It seems an unwise and uncivilized procedure to smother in sewage a valuable food animal of a present marketable value of from $15,000,000 to $20,000,000 annually. It is not the oyster industry alone that is concerned; it is the whole people of the United States. The great efforts that have been made in the last two decades to improve the sanitary and economic status of the oyster should not be thrown away by allowing oyster beds to be flooded by a continually increasing volume of sewage pollution. Other fisheries are at stake. The legitimate use of the ocean front for bathing and other recreative purposes is jeopardized. Biologic methods of sewage treatment applied before dilution are expensive, but are they in the long run as expensive as the spread of infection or the destruction of an important food industry? It seems possible that in the future more economical methods of sewage disposal by biologic treatment may be worked out, and it must be remembered that if the delicate business of

1. Nelson, T. C.: Am. J. Pub. Health 11: 498 (June) 1921.

propagating food animals is once ruined, it can be revived only with difficulty.

The remedy for oyster-borne infection seems to be to keep sewage away from oyster beds or else to abandon the latter altogether, to abolish the practice of "drinking" or "floating" oysters in brackish water in order to "fatten" them, and to put in force obvious measures for preventing the contamination of oysters during shucking. The first of these procedures presents the greatest difficulty, but is essential.

SANOCRYSIN—THE MØLLGAARD TUBERCULOSIS REMEDY

The first copies of a book by Møllgaard and his co-workers describing experiments with sodium auric thiosulphate, for which the name "Sanocrysiu" has been registered, have just been received in the United States, affording opportunity for a careful study of the work on which Møllgaard and his colleagues base their claims of a cure for tuberculosis.

The outstanding fact in connection with Sanocrysin is that it is only the name that is new. The salt is an old one, described first by two French chemists in 1845 and used today in the arts. All that Møllgaard claims to have done is to improve the method of preparation of the salt so as to eliminate from it poisonous substances which, in the older method, remained in the solution. But one is impressed with the fact that even Møllgaard's preparation is dangerous unless its use is carefully supervised, especially in tuberculous animals or persons. The dangers arise from severe inflammation of the lungs, heart and kidneys following the injection of the salt. These dangers Møllgaard claims to have rendered less serious by the use of serum from calves or horses previously injected with dead tubercle bacilli. While Møllgaard does not claim that the use of the serum takes any part in the cure which Sanocrysin is claimed to bring about, one cannot help feeling, when reading carefully the results of his experiments, that it is a conjunction of the two substances which exerts whatever curative influence in tuberculous patients the treatment may have. If the conjunction of the gold salt and the serum produces benefit, it will be a great advance in the treatment of tuberculosis.

The evidences of value of the new treatment in tuberculosis, however, are not convincing. Two monkeys, for instance, that recovered from apparently severe illness were diagnosed as tuberculous on a positive tuberculin test. The other evidences of their illness were not proved to be the result of infection with the tubercle bacillus.

The work on calves, which is the crucial experiment on which Møllgaard bases his belief that he has discovered a cure, is also not convincing, because the culture of tubercle bacillus which he used to inject his calves and which he calls virulent would not be considered virulent in this country. A culture, from 50 to 60 mg. of which, given intravenously, did not kill a control animal in two months, obviously would not be considered a virulent bovine culture, and yet it is with just such strains that Møllgaard has been working.

Any one who has worked with tuberculosis knows the extreme variation that occurs in animals apparently similar in every way when injected with the same dose of the same strain of tubercle bacillus, so that one would like to see a much larger number of controls than Møllgaard has used. In his groups, a single control animal has apparently been the rule.

A striking picture also is presented in the pathologic reports of those animals dying of what Møllgaard calls "tuberculin shock"—edema of the lungs, hemorrhages, nephritis, and serous exudates. These, one cannot help recalling, are phenomena of metal poisoning in animals, and the question naturally arises whether the tuberculous animal is not more susceptible to metallic poisoning than the normal animal. Especially is this view strengthened by Møllgaard's remarks concerning the danger of using Sanocrysin in any individual in which arsenic has been used. This is offered as a caution in human cases when there is a possibility that arsphenamin has been given at any time prior to the administration of Sanocrysin. One would like to see also a report of animals that had received a lethal dose of Sanocrysin and of the lesions present in such cases. Møllgaard refers to these in his book, but he does not give details of his results.

Møllgaard devotes a good deal of the space in his book to a theoretical discussion. In this he refers to the work of the great master of what is known as chemotherapy, Paul Ehrlich, and his belief that treatment of disease with chemical substances should have as its foundation a substance that will kill the infecting organism in the body and not affect the body cells. While Ehrlich and his followers were able to make great and surprising contributions to curative measures, as in the use of arsenic in disease from trypanosomes and spirochetes, yet, with the immense amount of work that has followed, we now know that his theory does not fully explain the facts found. This is true of Møllgaard's work. While it is possible that he may have made a contribution to therapy, his explanation that the gold salt kills the tubercle bacillus in the body and does not affect the body is not one that can be accepted in the light of present knowledge.

Whatever the theory, however, if this is a curative procedure—and this will be settled by further experiments—one thing is quite clear: Much more experimental work must be done before the substance can be offered generally as a cure for tuberculosis.

In the United States the new treatment cannot be sold until it is licensed by the United States Public

Health Service. The Public Health Service is carrying out the experiments necessary before a license can be granted. Meanwhile, the Council on Pharmacy and Chemistry will investigate and issue a preliminary report. As Møllgaard has based his claims on experiments in calves, the Public Health Service has invited and secured the cooperation of recognized scientists and laboratories—Dr. Theobald Smith of the Rockefeller Institute at Princeton, N. J.; Dr. William H. Park of the New York City Health Department, and Dr. E. C. Schroeder of the Bureau of Animal Industry in Washington. Calf experiments have been under way for some weeks. It is hoped to complete them before the treatment is tried in human cases; but, in view of the great public interest, this may not be necessary in the light of the work that is being carried out in Denmark and England.

In view of the dangers involved in the use of Sanocrysin, the best advice to those suffering from tuberculosis is to continue the well known and well tried methods of hygienic treatment that have been effective in the past, and to await patiently the knowledge that will come from the carefully planned experiments now under way.

OPTIMAL VERSUS NORMAL CONDITIONS OF HEALTH

Any one who appreciates the value of a "factor of safety" in connection with the body will require little argument to arrive at the conviction that this can probably be secured only through the exhibition of something more than minimal facilities for physiologic function. There may, of course, be a difference between the economies of human-made organizations and those of the living organism. In proposing this possibility, Meltzer [1] has remarked that the factors of safety in mechanical constructions are, after all, only factors of ignorance. Possibly Nature constructs her organisms on an efficient principle that permits the accomplishment of the greatest amount of work with a minimal supply of material and energy. It would be, as Meltzer adds, a fascinating distinction between a dead mechanism and a living organism, if true.

Meltzer directed his consideration of the advantages of animal factors of safety against the use of dietary standards that represent the average mean supply of energy, the minimal supply of food being considered as the ideal standard of diet. The advantages of having two kidneys and two lungs as an insurance against loss or damage in connection with the excretory functions are readily appreciated. Our satisfaction with such superabundance has its foundation in our ignorance of what might happen and in the reasonable desire to meet unexpected contingencies. It has not been so clear, however, that precisely the same considerations apply in relation to the supply of energy to the body. The undesirability of obesity, which is in a sense an expression of overabundance of food fuel and is calling forth protests from many directions, has called out champions of physiologic economy in nutrition who urge the benefits of moderation in eating. Their appeals give almost an implication of advantage in conforming to some standard of diet near the minimal requirement.

More recently, the evaluation of an "optimal" diet has begun to have a vogue. Into the philosophy of nutrition there has been introduced the idea that, in the words of McCollum, the word "normal" is too indefinite a term, and less satisfactory than "optimal" to designate the standard of excellence toward which we should strive in respect to physical development. We are reminded that physical deterioration may, and generally is, unnoticed or not admitted until it is pronounced. From this standpoint, nothing short of long-time experiments, comparisons and observations will suffice to bring adequate evidence that a regimen approaches the optimum. What this may mean is well illustrated by new observations of Sherman and MacLeod [2] of Columbia University on the relation of vitamin A to growth, reproduction and longevity. They have demonstrated that a certain modicum of this food factor in the daily diet may prove to be sufficient for normal growth up to nearly average adult size, yet not suffice to promote successful reproduction and lactation, and rarely to support satisfactory longevity. Yet a small increment in the supply of one dietary component alone—in this case, vitamin A—may profoundly alter the life picture. In their tests on animals, Sherman and MacLeod noted that along with the failure to reproduce successfully there usually also appeared in early adult life an increased susceptibility to infection and particularly a tendency to break down with lung disease at an age corresponding to that at which pulmonary tuberculosis so often develops in young men and women. The bacillus involved is different; but the close parallelism of increased susceptibility of the lung to infection at this stage of the life history appears very significant, especially in view of the assertion that the vitamin A content of lung tissue varies with that of the diet.

The New York biochemists consequently rate vitamin A as an even more important factor in the chemistry of food and nutrition than has previously been appreciated, for it must be supplied in liberal proportion not only during growth but in the food of the adult as well, if a good condition of nutrition and a high degree of health and vigor are to be maintained. At any rate, it seems clear that the bodily conditions and appearances of the moment do not always reveal the full facts as to human well being.

1. Meltzer, S. J.: The Factors of Safety in Animal Structure and Animal Economy, the Harvey Lectures, Philadelphia, J. B. Lippincott Company, 1906-1907.

2. Sherman, H. C., and MacLeod, F. L.: Relation of Vitamin A to Growth, Reproduction and Longevity, Proc. Soc. Exper. Biol. & Med. 22:175 (Nov.) 1924.

Current Comment

THE SUPPLY OF RURAL PHYSICIANS

As was pointed out in our editorial columns a few weeks ago, it is generally admitted that there is a shortage of physicians in the rural districts of the United States. Just how great the shortage actually is, readers will find from the survey made by Dr. Pusey and described in the series of articles by him which begins in this issue of THE JOURNAL. A similar survey, conducted under the auspices of the General Medical Board of the Rockefeller Foundation, inclined to the view that the shortage was dependent on social and economic conditions which could not be overcome by any policy under the control of the medical profession, or of medical educators in particular. Dr. Pusey arrives at a somewhat different conclusion, and the evidence that he presents in support of his contention offers a basis for discussion of what appears to be one of the major problems in medical economics and medical education today.

A MINOR PHYSIOLOGIC DEFECT

To any one accustomed to think of the body and its functional devices in terms of physiologic perfection, it is sometimes distressing to find "an exception that proves the rule." Nevertheless it is a fact, often rediscovered, that deviations from the theoretical ideal do exist in even the healthiest organism. For example, the eye is by no means the perfect optical system that one might expect it to be. The skin, as a rule, is impervious to substances that come into contact with it; yet there are chemical compounds that seem to penetrate it under certain conditions and thus upset the tradition of an integument perfect so far as the entrance of deleterious agents is concerned. Some time ago it was pointed out in THE JOURNAL [1] that, from the teleologic standpoint, impermeability of the urinary tract, not only to water and dissolved substances, but also to particulate matter such as bacteria, is an eminently desirable condition. Our readers were reminded that it would be physiologically futile to store excretory products in a structure whence they could readily be returned to the blood from which they had been eliminated. Nevertheless, recent evidence was adduced to show that the absorptive powers of the various portions of the urinary tract differ. The kidney absorbs dyes and bacteria to a marked extent. The ureter and urethra absorb these pigments readily, but the bacteria less readily. With respect to the real urinary reservoir, the bladder, observations made at the Mayo Foundation [2] two years ago have indicated that absorption takes place from that organ but only to a very limited extent. Undesired as it may seem, the fact has now been substantiated at the Johns Hopkins Medical School by Vickers and Marshall.[3] When salt or urea—both of which are representative chemical substances to which the bladder wall is in a sense accustomed—are introduced in concentrations not widely divergent from physiologic possibilities for them, they disappear in small amounts. This seems to be true even when precautions are taken to avoid injury to the bladder. Vickers and Marshall admit that the slight permeability of the bladder to the normal components of the urine would not seem to serve any physiologic function, but to be rather an interference with its normal function as a temporary receptacle for the urine. This permeability, they add, must therefore probably be regarded as a defect in the organ; the bladder is not quite perfect as a mechanism for preventing osmotic exchange between the urine and the body fluids. It is, indeed, difficult to secure absolute physiologic perfection in the presence of contending chemical and physical forces; but it is wise not to magnify minor imperfections when they are not of the sort that through neglect may grow into major defects.

1. Absorption from the Urinary Tract, editorial, J. A. M. A. 81:1791 (Nov. 24) 1924.
2. Magoun, J. A. H., Jr.: Absorption from the Urinary Tract, J. Urol. 10:47 (July) 1923.
3. Vickers, J. L., and Marshall, E. K., Jr.: Permeability of the Urinary Bladder to Urea and Sodium Chloride, Am. J. Physiol. 70:687 (Nov.) 1924.

THE BASAL METABOLISM OF GIRLS

Food has been defined to include "all the materials of which the body makes use in building up and repairing its tissues, in regulating its processes, in promoting its growth and health, and in obtaining energy for maintaining its warmth and doing work." [1] It is to be expected, therefore, that the needs for these materials—in other words, the dietary requirement—will vary in accord with certain conditions, among which the size of the individual, his activities and his age are foremost. It goes without saying that work requires energy and, other things being the same, a large person will have a greater need of energy than a smaller one. Many have regarded the requirement of age to be covered by the statement of size; for the young are, as a rule, far smaller than are adults. One of the significant contributions of human calorimetry has been the convincing demonstration that boys and girls in their teens need as much food as grown persons, and in some cases more. Children from 2 to 12 years of age need surprisingly large amounts of food, as compared with grown persons. The child from 2 to 5 years of age needs about half as much food as is needed by a grown person of moderate activity, while children from 10 to 13 years of age may need fully as much food as they will need later in their teens. This, however, is not due merely to the augmented activities of youth, important though their seemingly ceaseless performances may be. The basal metabolism itself is augmented. In a recent study on girls representing more individual determinations for these ages than any before reported, MacLeod [2] of Columbia University has found the average basal heat output per kilogram of body weight in twenty-four hours to be: for age 11, 29.2 calories; for 12 years, 32.3; for 13 years, 31.1, and for 14 years, 36.7. These figures are said to be even larger than has heretofore been indicated. And girls are not exceptions; for boys exemplify the same feature of augmented basal metabolism. Feed the children well!

1. Food: Why? What? How? American National Red Cross, Washington, D. C., June, 1924.
2. MacLeod, G.: Studies of the Normal Basal Energy Requirement, Dissertation, Columbia University, 1924.

Association News

THE ATLANTIC CITY SESSION

Hotel Accommodations

Dr. C. L. Andrews, chairman of the Local Committee of Arrangements for the Seventy-Sixth Annual Session of the American Medical Association to be held in Atlantic City, May 25-29, has submitted the following information concerning hotels at Atlantic City:

The Local Hotel Committee of Arrangements has made definite arrangements with the Hotel Mens' Association for ample accommodations for all who wish to attend the annual session.

A list of hotels with both the American and European plans with and without bath, with the exact location in the city, is here given.

The Hotel Committee prefers that each Fellow write to the hotel of his choice for reservations, and in all instances furnish the following information.

1. Whether single room or double room is desired.
2. Whether with or without bath.
3. When he will arrive and how long he wants to remain.

If satisfactory arrangements cannot be made by writing the hotel of choice direct, Dr. David B. Allman, chairman of the Local Hotel Committee, 104 St. Charles Place, or Dr. Clarence L. Andrews, chairman of the Local Committee on Arrangements, 1801 Pacific Avenue, will be glad to assist those having any difficulty.

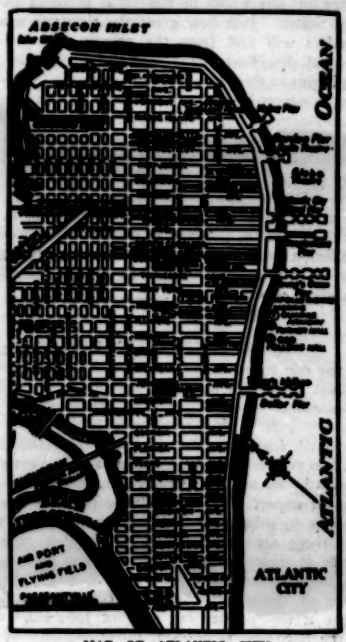
Special Exhibit by the Section on Dermatology and Syphilology

In connection with the Atlantic City Session, the Section on Dermatology and Syphilology will again conduct an exhibit. The committee in charge is composed of Howard Fox, New York; William Allen Pusey, Chicago, and Fred D. Weidman, Philadelphia. According to the plans of the committee, the exhibit will not be miscellaneous (as last year's was) but planned to illustrate the phases of syphilis in all stages; it is intended to make it of interest to the profession at large as well as to the members of the section.

Circular letters explaining the exhibit, with application blanks, have been mailed to those who registered in the Section on Dermatology and Syphilology at the Chicago and Boston sessions. Others who desire this literature may obtain it by communicating with Fred D. Weidman, M.D., Medical Hall, University of Pennsylvania, Thirty-Sixth and Hamilton Walk, Philadelphia. All applications must be sent to Dr. Weidman by March 1.

Delegate from Canadian Medical Association

Dr. T. Clarence Routley, general secretary of the Canadian Medical Association, has been appointed the official fraternal delegate from the Canadian Medical Association to the next annual session of the American Medical Association.



MAP OF ATLANTIC CITY

Daily Rates and Accommodations Offered by Atlantic City Hotels

Hotels Grouped by Location	Plan	Rooms Without Private Bath				Rooms With Private Bath			
		For One Person		For Two Persons		For One Person		For Two Persons	
		Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
Boardwalk:									
Royal Palace	American	$6.00	$8.00	$10.00	$14.00	$9.00	$12.00	$16.00	$20.00
Royal Palace	European	None	None	None	None	None	None	None	None
Breakers	American	6.50	9.00	12.00	16.00	9.00	12.00	15.00	24.00
Breakers	European	2.50	5.00	4.00	8.00	5.00	8.00	7.00	14.00
St. Charles	American	7.00	8.00	12.00	15.00	10.00	15.00	14.00	24.00
St. Charles	European	None	None	None	None	None	None	None	None
Seaside	American	7.00	8.00	13.00	14.00	9.00	10.00	16.00	20.00
Seaside	European	None	None	None	None	None	None	None	None
Strand	American	7.00	8.00	13.00	16.00	8.00	10.00	16.00	20.00
Strand	European	None	None	None	None	None	None	None	None
Chalfonte-Haddon Hall	American	6.00	8.00	12.00	14.00	10.00	.....	14.00	20.00
Chalfonte-Haddon Hall	European	None	None	None	None	None	None	None	None
Knickerbocker	American	6.00	8.00	11.00	14.00	8.00	12.00	14.00	18.00
Knickerbocker	European	2.50	4.00	4.00	7.00	4.50	8.00	7.00	12.00
Traymore	American	9.00	9.00	14.00	14.00	10.00	21.00	16.00	28.00
Traymore	European	5.00	5.00	6.00	6.00	6.00	16.00	8.00	18.00
Brighton	American	8.00	10.00	15.00	16.00	10.00	13.00	17.00	24.00
Brighton	European	None	None	None	None	None	None	None	None
Marlborough-Blenheim	American	8.00	9.00	14.00	15.00	11.00	14.00	16.00	23.00
Marlborough-Blenheim	European	5.00	6.00	7.00	8.00	8.00	11.00	9.00	18.00
Shelburne*	American	None	None	None	None	None	None	None	None
Shelburne*	European	4.00	7.00	8.00	14.00	6.00	11.00	10.00	24.00
Ritz-Carlton	American	None	None	None	None	10.00	13.00	16.00	22.00
Ritz-Carlton	European	None	None	None	None	5.00	8.00	7.00	12.00
Ambassador	American	None	None	None	None	None	None	None	None
Ambassador	European	None	None	None	None	5.00	10.00	8.00	12.00

* Continental plan rates quoted by Shelburne include breakfast.

Daily Rates and Accommodations Offered by Atlantic City Hotels—(Continued)

Hotels Grouped by Location	Plan	Rooms Without Private Bath				Rooms With Private Bath			
		For One Person		For Two Persons		For One Person		For Two Persons	
		Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
Massachusetts Avenue:									
Gerstel's Lelande	American	$6.00	.....	$11.00	.....	.....	.....	$15.00	.....
Gerstel's Lelande	European	None	None	None	None	None	None	None	None
Thurber	American	None	None	None	None	None	None	None	None
Thurber	European	1.50	$2.00	3.00	$4.00	$3.00	$4.00	.....	$5.00
Connecticut Avenue:									
Galen Hall	American	6.00	7.00	11.00	13.00	8.00	11.00	14.00	18.00
Galen Hall	European	None	None	None	None	None	None	None	None
New Jersey Avenue:									
Grossman's	American	7.00	8.00	12.00	15.00	9.00	10.00	15.00	18.00
Grossman's	European	None	None	None	None	None	None	None	None
St. Charles Place:									
Raleigh	American	5.00	7.00	10.00	12.00	7.00	8.00	12.00	14.00
Raleigh	European	2.50	5.00	5.00	8.00	4.00	6.00	6.00	10.00
Virginia Avenue:									
Wiltshire	American	4.50	5.50	9.00	11.00	.....	.....	11.00	12.00
Wiltshire	European	None	None	None	None	None	None	None	None
Franklin	American	None	None	None	None	None	None	None	None
Franklin	European	2.00	2.50	4.00	5.00	3.00	3.50	5.00	7.00
Governor	American	None	None	None	None	None	None	None	None
Governor	European	1.50	2.00	.....	.....	None	None	None	None
Morton	American	4.50	5.00	9.00	10.00	6.00	7.00	11.00	13.00
Morton	European	None	None	None	None	None	None	None	None
Clarendon	American	5.00	6.00	9.00	10.00	6.00	7.00	10.00	12.00
Clarendon	European	None	None	None	None	None	None	None	None
South Carolina Avenue:									
New England	American	.....	.....	8.00	11.00	.....	.....	12.00	14.00
New England	European	None	None	None	None	None	None	None	None
Watkins	American	.....	.....	7.00	10.00	.....	.....	12.00	14.00
Watkins	European	None	None	None	None	None	None	None	None
Warwick	American	3.50	5.00	6.50	11.00	5.00	7.00	8.00	10.00
Warwick	European	None	None	None	None	None	None	None	None
Thompson	American	3.50	4.00	6.00	8.00	None	None	None	None
Thompson	European	None	None	None	None	None	None	None	None
Mullica	American	3.50	3.50	6.00	7.00	None	None	None	None
Mullica	European	None	None	None	None	None	None	None	None
Radnor	American	None	None	None	None	None	None	None	None
Radnor	European	1.50	1.50	2.00	3.00	None	None	None	None
Ocean Avenue:									
Bon Air	American	3.50	4.50	7.00	8.00	None	None	None	None
Bon Air	European	1.25	1.50	2.50	3.00	None	None	None	None
Tennessee Avenue:									
Elberon	American	4.00	6.00	8.00	10.00	6.00	7.00	11.00	14.00
Elberon	European	2.00	4.00	4.00	6.00	4.00	5.00	7.00	10.00
Continental	American	4.00	5.00	8.00	10.00	6.00	8.00	10.00	12.00
Continental	European	2.00	3.00	4.00	5.00	3.50	4.00	7.00	8.00
Louvan	American	None	None	None	None	None	None	None	None
Louvan	European	2.00	3.00	3.00	4.00	None	None	None	None
St. James Place:									
Lockhart	American	4.00	5.00	7.00	9.00	6.00	7.00	10.00	14.00
Lockhart	European	2.00	3.00	4.00	6.00	4.00	5.00	8.00	10.00
St. James	American	3.50	5.00	7.00	8.00	None	None	None	None
St. James	European	2.00	3.50	3.00	3.50	None	None	None	None
William Penn	American	.....	.....	8.00	10.00	.....	.....	11.00	12.00
William Penn	European	None	None	None	None	None	None	None	None
Devonshire	American	4.50	5.00	8.00	10.00	.....	.....	10.00	14.00
Devonshire	European	.....	2.50	4.00	5.00	.....	.....	7.00	8.00
Kentucky Avenue:									
New Clarion	American	5.00	6.00	8.00	10.00	7.00	8.00	11.00	13.00
New Clarion	European	2.00	2.50	3.00	4.00	4.00	5.00	5.00	7.00
Monticello	American	4.50	5.00	8.00	10.00	.....	.....	10.00	14.00
Monticello	European	.....	2.50	4.00	5.00	.....	.....	7.00	8.00
Biscayne	American	4.00	5.00	8.00	10.00	5.00	6.50	10.00	13.00
Biscayne	European	2.00	3.00	4.00	6.00	3.00	4.50	6.00	8.00
Rittenhouse	American	3.50	4.00	7.00	9.00	5.00	7.00	10.00	12.00
Rittenhouse	European	1.50	2.50	3.00	5.00	3.00	4.00	5.00	6.00
Westminster	American	3.50	4.00	7.00	9.00	6.00	7.00	9.00	10.00
Westminster	European	2.00	2.50	4.00	5.00	3.00	3.50	5.00	6.00
Illinois Avenue:									
Craig Hall	American	4.00	5.50	8.00	9.00	5.00	7.00	9.00	10.50
Craig Hall	European	None	None	None	None	None	None	None	None
Park Place:									
Glaslyn-Chatham	American	4.50	.....	8.00	.....	6.00	.....	12.00	.....
Glaslyn-Chatham	European	None	None	None	None	None	None	None	None
Chelstenham-Revere	American	4.00	5.00	8.00	10.00	6.00	6.00	12.00	12.00
Chelstenham-Revere	European	2.50	.....	5.00	.....	4.00	.....	8.00	.....
Michigan Avenue:									
Pennhurst	American	4.50	5.00	9.00	10.00	7.00	7.00	12.00	14.00
Pennhurst	European	None	None	None	None	None	None	None	None
Arlington	American	3.00	4.00	6.00	8.00	5.00	6.00	8.00	10.00
Arlington	European	1.50	2.00	3.00	5.00	3.00	3.50	4.50	6.00
Arkansas Avenue:									
Lexington	American	None	None	None	None	None	None	None	None
Lexington	European	1.50	3.00	2.00	4.00	3.00	4.00	4.00	7.00
Osborne	American	3.50	4.50	6.00	8.00	4.00	4.50	7.50	8.50
Osborne	European	1.50	2.00	3.00	3.50	2.50	3.50	4.50	6.00
Missouri Avenue:									
Gage	American	None	None	None	None	None	None	None	None
Gage	European	2.00	2.50	3.00	4.00	3.50	3.50	5.00	5.00
Pacific Avenue:									
Plaza	American	5.00	6.00	9.00	10.00	7.00	8.00	12.00	14.00
Plaza	European	None	None	None	None	None	None	None	None
Eastbourne	American	4.50	5.50	8.00	9.00	7.00	8.00	10.00	12.00
Eastbourne	European	None	None	None	None	None	None	None	None

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Smallpox at Birmingham.—During the week ending January 10, fifty-eight cases of smallpox were reported in Birmingham, thirteen in Bessemer and twenty-six in Jefferson County outside these two cities.

ARIZONA

Public Health Officers.—In the October, 1924, *Bulletin* of the Arizona State Board of Health, just received, there is a list of the twenty-nine city health officers in the state. The list of county health officers comprises thirty-three names, representing fourteen counties, many of the officers being deputies and some assistant county physicians. Every health officer is a physician. This number of the *Bulletin* also contains a page of titles of public health pamphlets which will be sent without charge on request.

CALIFORNIA

Hospital News.—The Los Angeles County General Hospital, Los Angeles, established an outpatient department, August, 1924, to which, on Dec. 31, 1924, patients had made 27,008 visits.

Nine Hundred Chiropractic Licenses Held Up.—Following recent examinations at Los Angeles and San Francisco, James Compton, secretary, State Board of Chiropractic Examiners, announced, it is reported, that 900 chiropractors "won approval of the board." But a writ of prohibition was secured from the courts in San Francisco by one Joseph Sanford, which prevented the board from issuing the approved chiropractors' licenses, on the ground that they had not met the requirements of the law. The present board of chiropractic examiners is the second named by Governor Richardson, the first having been ousted months ago by the San Francisco courts. Sanford has recently obtained permission from the attorney general of the state to test in court the validity of the organization of the present board.

Fraudulent Credentials.—Joseph Charles Gancsu was arrested, Dec. 6, 1924, in Pasadena for violation of the medical practice act. On investigation, the following documents, which appear to be fraudulent, were found in Gancsu's office. On the wall, for example, was a California license, probably the certificate issued by the board to Harriet C. Reynolds. Her California certificate disappeared, together with her Ohio license and that of her husband, about two years ago when J. C. Gancsu did some electrical wiring in their home. The name had been erased in this certificate and that of "Doctor J. Chas. Gancsu, M.D.," graduate of "New York Post-Graduate Medical School," written in. There was found also an Ohio license issued by the state medical board to Ralph W. Reynolds, M.D., now of Pasadena, whose name had been partially erased and the seal cut out, and an Ohio license which, it is believed, was issued to Harriet C. Reynolds, which had been altered similarly; also reproduced copies of two Ohio licenses, one filled out to appear as, if issued to Joseph Charles Gancsu, the other being blank; a reproduced copy of a diploma of the "Colegii Parkienses," on which was the Park College seal which had apparently been removed from a genuine diploma, and, a reproduction of three "The City of New York Certificates of Registration," one a blank on architect's drawing paper and two photographic reproductions filled out to J. C. Gancsu. An attempt has been made, it is reported, to have Gancsu declared insane. The consensus of opinion of the Pasadena jail officials was said to be that he is sane.

COLORADO

Medical School Buildings Dedicated.—The regents and the faculty of the University of Colorado School of Medicine have announced the formal dedication of the new medical school and hospital buildings on the campus in Denver, for January 23.

Society News.—At the annual meeting of the Denver County Medical Society, Denver, January 6, Dr. Clinton G. Hickey was elected president; Dr. Minnie C. T. Love, vice president; Dr. Louis V. Sams, secretary, and Dr. Henry W. Stuver, treasurer.

ILLINOIS

The Governor's Message.—In his recent inaugural message to the general assembly, Governor Small included in his recommendations laws that would provide (1) a new state hospital near Chicago, and (2) that all counties may set up and operate full-time health departments.

Medical Director Appointed.—Dr. William L. Calvert, South Bend, Ind., has been appointed medical director of the Adams Tuberculosis Sanitarium (Hillcrest) to succeed Dr. Harry C. Worthington, who resigned about a year ago. Dr. Calvert has been in charge of a similar institution in South Bend.

Eating Raw Oysters Forbidden.—The state director of health, Dr. Isaac D. Rawlings, issued an order, January 10, which forbids the eating of raw oysters in the state of Illinois after January 15. The order was issued in view of the typhoid fever situation and because precautionary warnings had not been heeded. It prohibits the serving of raw oysters by any hotel, restaurant, eating house or railroad in the state, also the admitting of raw oysters into the state except where a written agreement is obtained from the dealer that they will be shipped out of the state or not be eaten raw. The dealer must also obtain an agreement from the ultimate consumer that oysters will be cooked.

Chicago

Physicians Honored.—A banquet was given, January 16, by the Physicians' Fellowship Club at the Logan Square Masonic Temple in honor of Drs. Jeremiah H. Walsh, a trustee of the American Medical Association, and president of the Chicago Medical Society, and Dr. Jacob C. Krafft, president-elect, Illinois State Medical Society.

Gift to University of Chicago.—The General Education Board has made a conditional gift of $2,000,000 toward the University of Chicago's endowment fund, the condition being that the university raise $4,000,000 additional for the same purpose. The first objective of the university for 1925 in its development program is to raise $6,500,000 for the endowment of instruction and research; the second, to raise $11,000,000 for new buildings.

Hospital Taxi Service.—St. Luke's, Mercy, Wesley Memorial and the Chicago Memorial hospitals have installed "ticker" call boxes which provide them with two minute taxicab service. A signal is instantly recorded on a tape in the nearest agent's office, from which a taxicab is promptly dispatched. This service is identical with that used by the Western Union and Postal Telegraph companies to summon messengers. Chicago is the first city to use these call boxes in hospitals.

The New Wesley Hospital.—The chairman of the board of Wesley Hospital announced, January 19, that the new Wesley Memorial Hospital will be erected on a site recently purchased at Superior Street and Fairbanks Court. Northwestern University will lease land adjoining the McKinlock Campus for one of the hospital buildings, which will be used for clinical instruction. This building will have a capacity of 400 beds, and the total capacity of the new hospital will be 1,200 beds.

Professor Michelson Confirms the Einstein Theory.—In a public lecture before an invited audience in Orchestra Hall recently on "Light Waves as Measuring Rods for Sounding the Infinite and Infinitesimal," Prof. Albert A. Michelson, head of the department of physics, University of Chicago, explained the provisional results of his ether drift experiment, conducted at Clearing, Ill., which confirms Professor Einstein's general theory of relativity. The question to be decided was whether the earth's rotation influenced the velocity of light beams sent in opposite directions through a mile rectangle of water pipe from which the air had been exhausted.

INDIANA

Hospital News.—John W. Wilds, Thorntown, has offered to build a hospital for not more than $150,000, and to create an endowment fund up to that amount for the support of the building if the town will raise an equal sum and furnish the site.——The Madison County Protestant Hospital Board has purchased the Home Hospital, Anderson.——The new psychopathic ward at the City Hospital, Indianapolis, was formally opened, January 8. Coincident with this announcement, the

board of health announced the appointments of staff physicians at the hospital for 1925. Practically the entire staff for 1924 was reappointed.

Licenses Revoked.—The state board of medical registration and examination revoked the licenses, January 13, it is reported, of Drs. George L. Dickerson and Edward E. Porter, both of Indianapolis, on the grounds that they had lent their licenses to other persons. Dr. Dickerson's license was revoked by the state board on a former occasion, October, 1906, for using his license for the protection of his brother, whom he put in charge of an office in Logansport. His brother was a barber. Dr. Porter's Illinois license was also revoked in September, 1918, on a charge of lending his certificate to one Emil Pelisher of Hammond, for use in an office in Joliet, Ill., it is reported.

Medical Legislation.—The chairman, legislative committee of the Indiana State Medical Association, announced, January 5, it is reported, that the association would introduce a bill in the present legislature to amend the laws pertaining to the practice of medicine in the state, so as to give courts authority to enjoin any person without qualifications as stipulated under the present law from treating the sick. The amendment would provide that an injunction may be obtained by the attorney general or the state medical registration board. The present law prescribes fines for persons practicing without licenses, but provides no method whereby they can be effectually prevented from practicing. The chairman also stated that the association would oppose the formation of any examining boards other than the present state board.

Council of State Society Attacks Podiatry Bill.—The podiatry licensing bill, which has been pending in the legislature as a vetoed measure from the session of 1923, was passed by the house, January 14, by a vote of 78 to 11, and ordered transmitted to the senate. The chairman of the legislative committee of the Indiana State Medical Association issued a statement following the action of the house in which, it is reported, he said, "This bill should not become a law for the reason that it defines 'podiatry' to be the diagnosis and treatment of all surgical and medical diseases of the human foot. The diagnosis and treatment of the human foot may only safely be undertaken by physicians who are qualified. This at most only can be considered a specialty of medicine, and men should not be permitted to engage in special practice without qualification in the whole subject."

IOWA

Society News.—At a meeting of the Linn County Medical Society, Cedar Rapids, January 8, Dr. Richard L. Sutton, Kansas City, conducted a skin clinic, following which he gave an illustrated lecture on "Skin Cancers." Dr. Wesley E. Gatewood, Jr., Iowa City, spoke on "Treatment of Gastric Ulcer."

MARYLAND

Extension Clinics.—The Division of Medical Extension, University of Maryland, has arranged clinics for Thursday afternoons during January and February. January 8, Dr. Harry H. Kerr, Washington, D. C., lectured on "The Surgical Treatment of Angina Pectoris"; January 15, Dr. William H. Wilmer spoke on "Certain Disturbances of the Hypophysis Cerebri as Evidenced in the Eye."

Plaque in Memory of Osler.—A bronze memorial plaque of the late Dr. William Osler was presented to Johns Hopkins Hospital, January 19, at a special meeting of the Johns Hopkins Hospital Historical Club. The plaque is a three-quarter-length figure of Dr. Osler, the work of Dr. Robert Tait McKenzie, Philadelphia, director, department of physical education, University of Pennsylvania. Dr. Thomas McCrae, Philadelphia, co-author with Dr. Osler of "Osler's System of Medicine," made the presentation. Dr. William S. Thayer, who was associated with Dr. Osler at Johns Hopkins Hospital and succeeded him as physician in chief, spoke on "Osler in the Clinic." Dr. William H. Welch spoke on "Osler, Student and Teacher of Disease." Dr. Howard A. Kelly, also an associate of Dr. Osler, is president of the Johns Hopkins Historical Club.

Society News.—The Baltimore City Medical Society, January 16, held a meeting consisting of a series of brief papers on general surgery by members of the surgical department of Johns Hopkins Hospital, at the Medical and Chirurgical Faculty Building, Baltimore. The speakers were: Drs. William S. Baer, Cecil H. Bagley, John A. C. Colston, Samuel J. Crowe, Thomas S. Cullen, Walter E. Dandy, John S. Davis, William A. Fisher, Jr., Richard H. Follis, Walter Hughson, William F. Rienhoff, Harvey B. Stone and John M. T. Finney. A general discussion followed these papers.——At the third clinic, January 22, arranged by the Division of Medical Extension, University of Maryland, Dr. John M. T. Finney, Baltimore, spoke on "Surgical Diagnosis."——Dr. Eugene L. Opie, director of laboratories, Henry Phipps Institute, Philadelphia, gave a public lecture on "Latent Tuberculosis Infection and Resistance Against Tuberculosis," January 19, at the School of Hygiene and Public Health, Johns Hopkins University.

MASSACHUSETTS

Appointments at Harvard Medical School.—Dr. Joshua C. Hubbard, Boston, has been appointed professor of clinical surgery at the Harvard Medical School to fill the position made vacant by the resignation of Dr. Frank H. Lahey. Dr. Robert C. Cochrane has been appointed instructor in surgery and in genito-urinary surgery from instructor in surgery; Dr. Gustave P. Grabfield, instructor in pharmacology and assistant in medicine, from instructor in pharmacology; Dr. William G. Lennox, assistant in medicine and research fellow in neuropathology, from assistant in medicine.

Personal.—Drs. Charles S. Benson, Haverhill, and John L. O'Toole, Bradford, were recently elected members of the school committee of Haverhill.——Dr. Lillian R. Smith, Lawrence, has been appointed to a position with the Michigan State Department of Health and will take up her new duties, March 1.——Dr. Albert Pfeiffer, Boston, for several years associated with the Massachusetts Department of Health, has accepted a similar position in New York.——Dr. George K. Pratt, medical director, Massachusetts Society for Mental Hygiene, will deliver a series of eight lectures on "The Mental Health of Children," before the Boston Y. W. C. A., between January 5 and January 28.——Dr. Lesley H. Spooner, formerly instructor in bacteriology, Harvard University Medical School, Boston, has been made medical director of the new Boston branch of the Life Extension Institute.——It was announced, January 1, by the mayor of Fall River, that Dr. Jean N. Normand will succeed Dr. Arthur J. Ledoux as a member of the board of health.

MICHIGAN

Chiropractors Accept Probation in Lieu of Six Months.—Four chiropractors of Lansing, arrested last May on a charge of "advertising and holding themselves out to the public as medical practitioners," were sentenced, Dec. 30, 1924, in circuit court, to six months in the county jail, and costs of $150 each, or as an alternative, one year's probation and costs. They accepted probation, it is reported, because it would enable them "to be active" when the state legislature convenes.

Personal.—Dr. Guy L. Connor, Detroit, has been appointed temporary secretary of the state board of registration in medicine, until a successor of the late Dr. Beverly D. Harison is elected.——Dr. Theophile Raphael, State Psychopathic Hospital, Ann Arbor, has been promoted to assistant professor of psychiatry, University of Michigan Medical School.——Dr. Clarence V. Spawr, Benton Harbor, has been appointed physician to the Marquette penitentiary.——Dr. Jacob S. Lipsky has been appointed city physician for Detroit.

Legislative Policy.—At a special meeting of the council of the Michigan State Medical Society, last month, the question of policy on legislative matters in the present session of the legislature was discussed. The council decided to instruct the legislative committee to resort to all honorable means to educate and inform members of the legislature about medical facts and requirements for the safeguarding of the public's health, calling on members of the council and component societies to aid them. The council decided that there should be no paid lobbyist at Lansing.

MINNESOTA

Report on Smallpox.—During the first three days of the New Year, there were eight deaths from smallpox in Minneapolis and one in St. Paul and a total of twenty-two new cases reported to the state board of health. A summary of the smallpox situation during 1924 by the secretary of the state board, shows that there was in Minneapolis a total of 1,020 cases and 220 deaths; in St. Paul, 775 cases and fifteen deaths; in the state outside these two cities, 1,301 cases and sixty-five deaths, making a total in the state of 3,096 cases and 300 deaths.

MISSISSIPPI

Hospital News.—The new Confederate Veterans' Hospital at Beauvoir, erected at a cost of $50,000, was dedicated, Nov. 29, 1924. It has a capacity of forty-five beds. This institution is maintained by the state for indigent Confederate soldiers and sailors.

MISSOURI

Personal.—Dr. George W. Hawkins, Salisbury, has been appointed county physician to succeed the late Dr. Bondurant Hughes. The appointment also carries with it the position of county health officer.

Hospital News.—Dr. Daniel Morton has been elected chairman and chief of the visiting staff, Noyes Hospital, St. Joseph; Dr. Clarence A. Good, vice chairman; Dr. Elmer C. Ambrose, secretary-treasurer, and Dr. Edward A. Gummig, recorder.

New Medical Journal.—The *Springfield (Mo.) Clinical Bulletin*, published for the first time this month, according to the foreword, will attempt to furnish to the medical profession tributary to Springfield a better knowledge of its hospitals and bring about a closer cooperation among them. It will be published quarterly. Dr. Paul F. Cole is managing editor.

Springfield to Enforce Health Laws.—The city council of Springfield passed an ordinance, Dec. 19, 1924, which provides for prosecution in case of violation of the city health laws. Heretofore, the jurisdiction in these cases was in the state courts. The ordinance conforms closely to the state law, enumerating and defining contagious disease, requiring reports of such diseases to the city health department, providing for the closing of schools and other public places if necessary in case of epidemics, and fixing the penalties for violation of the ordinance.

Gift to Medical Society.—A gift of $50,000 to the St. Louis Medical Society by Mrs. Sarah L. G. Wilson was announced, January 8. Mrs. Wilson's gift is intended principally for the construction of a library in the new building that the society proposes to erect, and as a memorial to her brothers, Drs. Frank A. and William C. Glasgow. The St. Louis Medical Society already owns the site for the structure and has about $160,000 in its building fund, it is reported. At a meeting of the society, January 6, Dr. Frederick W. Bailey was installed as president, Drs. Joseph F. Mayes and Harry M. Moore, vice presidents, Dr. Edwin C. Funsch, secretary, and Dr. Ross A. Woolsey, treasurer.

NEW MEXICO

Personal.—Dr. Lucien L. Miner, Silver City, has been appointed health officer of Grant County to succeed Dr. Oliver J. Westlake, who has resigned on account of ill health.

NEW YORK

Committee to Investigate Pollution of Waters.—The joint legislative committee started an investigation, January 17, it is reported, to determine to what extent oysters and other edible shellfish are responsible for the present outbreak of typhoid fever. The Long Island waters will be investigated first, a request having been made by members of the oyster industry. The joint committee expects to present its findings by February 1.

Society News.—Dr. Albert G. Swift has been elected president of the Syracuse Academy of Medicine, Dr. William E. Ayling, secretary, and Dr. Michael L. Ryan, treasurer.——At the annual meeting of the Cattaraugus County Medical Society, January 6, Dr. James A. Taggert, Salamanca, was elected president; Dr. Myron C. Hawley, Randolph, vice president, and Dr. Myron E. Fisher, Delevan, secretary-treasurer. Dr. Marshall Clinton, Buffalo, addressed the society on "Goiter."

New York City

New Building for the Blind.—The New York Association for the Blind announces that plans have been prepared for a $250,000 building for settlement work among the blind, to be erected on the site of the old "Lighthouse" and an adjoining lot at 111 East Fifty-Ninth Street.

Hospital Honors Staff.—Four physicians who have served twenty-five years on the staff of the Wyckoff Heights Hospital were given a testimonial dinner, January 14, by the hospital board. They were Drs. Russell S. Fowler, Jacob Fuhs, William Browning and William Moser. Supreme Court Justice Edward Lazansky was the principal speaker.

Automobile Deaths.—Reports from all police precincts show 1,024 deaths from street accidents in 1924, against 1,073 in 1923, a decrease of forty-nine. It is deduced that 252 lives were saved, since there were 60,000 more motor vehicles in the city in 1924 than in the preceding year. On this basis, 27.1 persons were killed per 10,000 vehicles in 1924, against 33.8 in 1923.

Fewer Registered Midwives.—According to the *Weekly Bulletin* of the city health department, the number of registered midwives in the city has decreased since 1909 from 3,131 to 1,341, and the number of obstetric cases handled by them from 49,616 to 27,466. This improvement is attributed in part to a growing appreciation among prospective mothers of the advantages of modern hospital care.

Dedication Addresses.—Dr. Livingston Farrand, president, Cornell University, New York; Surg. Gen. Edward R. Stitt, U. S. Navy; Augustus S. Downing, director of professional education, state of New York, and Dr. Henry D. Chapin were among the speakers at the dedication, January 22, of the new building of the New York Post-Graduate Medical School and Hospital.

Academy Increases Number of Trustees.—At the annual meeting of the New York Academy of Medicine, January 15, recommendations of the council to increase the number of trustees from five to ten were adopted. The recommendation to increase the number of trustees necessary to constitute a quorum from four to six was also accepted. The building committee showed lantern slides of the plans for the new building. These are nearly complete. It is believed possible to start construction in the near future.

Illegal Practitioner Sentenced to Prison.—Charles W. Rainke, Brooklyn, was sentenced, January 15, in Special Sessions to from six months to three years in the penitentiary for practicing medicine without a license. The assistant district attorney said that Rainke had been fined $250 a year ago for selling "a supposed medicine" without a permit from the health department, and that a warrant was on file in Jersey City charging him with practicing medicine without a license there. Rainke was also accused of having operated a "health institute" in Newark. He was arrested in December, 1924, on complaint of Walter Mikrutt on the charge of having treated his wife, who had to be taken to the Kings County Hospital, where she died.

Europeans to Study Bacterium Pneumosintes.—A group of prominent bacteriologists reached New York, January 3, to study *Bacterium pneumosintes* at the Rockefeller Institute, the method of isolating that organism from cases of influenza and its relation to allied bacteria found in other diseases. The study will extend over three months. Those who will take part, according to *New York Medical Week*, are Dr. Ronald G. Canti, St. Bartholomew's Hospital, London; Dr. Louis Boez, Institute of Hygiene and Bacteriology, Strasbourg, France; Dr. Leon Muller, University of Liege, Belgium; Dr. Walter Levinthal, Robert Koch Institute, Berlin; Dr. Dino Nai, Milan, Italy, and Dr. Svend A. Larsen, State Serum Institute, Copenhagen.

Physicians' Club.—The Committee on Permanent Home, Eastern Medical Society, has recommended the organization of a physicians' club, and the society is now fostering that plan. It is proposed to create a place of dignity, beauty and comfort, with suitable auditorium space, library and lounge, gymnasium, guest rooms and bowling alleys. Membership will be limited to physicians in good standing, endorsed by three founders or charter members, and approved by the committee on admissions. The annual dues of all classes of members will be $50. Those who subscribe $2,000 of a guaranteed first mortgage bond will be the founders; those who subscribe $1,000 to this bond will be patrons; regular members will be those regularly elected to membership on payment of an initiation fee of $100. It is proposed to buy and remodel a club house near Fifty-Ninth Street and Central Park.

Personal.—Dr. Henry L. Jaffe has resigned from the laboratory division of the Montefiore Hospital to become the director of laboratories of the new Hospital for Joint Diseases. ——Dr. Archibald S. Dean has been appointed pediatrician in the division of maternity, infancy and child hygiene of the New York State Department of Health. During the last year Dr. Dean has served as psychiatrist on the staff of the National Committee of Mental Hygiene.——Dr. Harry P. Swift has been appointed a member of the board of health to succeed Dr. Leland E. Cofer, former health officer of the port, who resigned. Dr. Swift has been associated with the health department for sixteen years.——Dr. Joshua H. Leiner has been appointed associate visiting neurologist to the

Montefiore Hospital.——Dr. Emanuel D. Friedman has been appointed clinical professor of neurology at the University and Bellevue Hospital Medical College.——Dr. Samuel McCullagh will address the American Stomatological Association, at 50 West Eighty-Eighth Street, February 5, on "Rhinology in Relation to Stomatology with Special Reference to Chronic Antral Infections."

NORTH CAROLINA

Hospital News.—Durham County has requested authority from the legislature to vote on the issue of $200,000 in bonds for the erection of a county tuberculosis sanatorium.——Dr. W. Myers Hunter has been elected president of the staff for 1925 of the Mercy General Hospital, Charlotte; Dr. Robert M. Gallant, vice president, and Dr. Douglas Heath Nisbet, secretary.

Fireproof Hospitals.—The insurance commissioner and the North Carolina State Hospital Association have agreed on a bill to be presented to the present legislature which provides that only fireproof hospital buildings may be erected in the state. The bill gives the present owners of hospitals three years to make them fireproof, and provides that new hospitals or repairs be approved by the state fire marshal.

OHIO

Society News.—Dr. Dean D. Lewis, Chicago, gave an illustrated lecture on fractures before the Marion County Medical Society, Marion, January 6.——In appreciation of his ten years' service as secretary, the Summit County Medical Society, Akron, January 6, presented Dr. Alexander S. McCormick with a gift of $300.

Dr. Harbin Comes to Western Reserve University.—Dr. Robert Maxwell Harbin, Rome, Ga., has accepted an appointment as professor of orthopedic surgery, Western Reserve University School of Medicine, Cleveland, and orthopedic surgeon to Lakeside and Rainbow hospitals. Dr. Harbin graduated from the Medical School of Harvard University, serving internships at the Peter Bent Brigham and Children's Orthopedic hospitals, Boston, and has been connected with the Harbin Hospital, Rome, Ga., about two years.

County Society to Foster Hospital Campaign.—It was announced New Year's Day that the Washington County Medical Society would initiate a campaign for $200,000 to build and equip a county hospital. The plans thus far propose a sixty-bed hospital, thoroughly modern, to be located in the vicinity of Marietta, and, although administered as a county institution, not to be supported by direct taxation. Dr. Stephen A. Cunningham is chairman of the ways and means committee appointed by the Washington County Medical Society, Dr. James B. Penrose, secretary.

Legislative Program.—The state department of health has completed its legislative program and will present its issues to the general assembly now in session. The issues which will be particularly emphaized are:

1. Removal of health administration from partisan politics.
2. Larger appropriations for the care of the state's feeble-minded and for the crippled and handicapped.
3. To improve the facilities for fighting tuberculosis by making larger appropriations for finding unreported cases; enlarging sanatoriums and for carrying on the eradication of bovine tuberculosis.
4. Opposition to any changes in the state medical practice act that would weaken any safeguards that have been established by law to protect the sick against incompetent practitioners.

Personal.—Dr. David M. Criswell, health commissioner of Coshocton County, has been appointed health commissioner of the city of Coshocton also.——Dr. Louis M. Piatt, Ottawa, has been appointed health commissioner of Putnam County to succeed Dr. Walter H. Mytinger, resigned.——Dr. Roy G. Pearce has resigned from the medical staff of the B. F. Goodrich Company, Akron.——Dr. Townsend H. Dickinson, Dayton, has been appointed to the staff of school medical inspectors of that city.——Dr. Harley J. Powell, Bowling Green, has been reappointed county health commissioner for a period of two years.——Dr. Horatio Z. Silver, Eaton, has been appointed physician to the Preble County Home, to succeed Dr. James I. Nisbet.——Dr. Clifford J. Baldridge, Hamilton, has been reappointed health commissioner of Butler County.

PENNSYLVANIA

Society News.—Dr. Henry T. Chickering, New York, addressed the Allegheny County Medical Society, Pittsburgh, January 8, on "Specific Therapy of Pneumonia."——Dr. Joseph Sailer, professor of clinical medicine, University of Pennsylvania School of Medicine, Philadelphia, addressed the December meeting of the Dauphin County Medical Society on "Physical Examination of the Heart."

Mothers' Assistance Law.—Fifty-five of the sixty-seven counties of this state are now organized under the Mothers' Assistance Law. In October, 1924, 3,766 families, having a total of 13,286 children under 16 years of age, received aid. The average monthly allowance per family is $37.19, and per child, $10.54. The last general assembly appropriated $1,750,000 for Mothers' Assistance for the biennium, which, when matched by county funds, gave a yearly expenditure of that amount. There are nearly 6,000 families in Pennsylvania eligible to Mothers' Assistance.

Lycoming County Medical Society.—At the seventy-sixth annual meeting of this society at Williamsport, January 9, a resolution was adopted disapproving the proposed twentieth amendment to the Constitution of the United States (the child labor amendment) for reasons among which were that it usurps the right of the parent and is an unnecessary interference with exclusive business of the states. Dr. John Norman Henry, Philadelphia, president, Medical Society of the State of Pennsylvania, gave an address on "State Medicine." The following officers were elected: president, Dr. John P. Harley; vice presidents, Drs. George C. Davis, Milton, and Philip H. Decker; secretary, Dr. Walter S. Brenholtz; treasurer, Dr. John A. Campbell.

Philadelphia

Smallpox Quarantine.—Four city blocks bounded by Torresdale Avenue, Tulip, Magee and Unruh streets, were quarantined, and 200 persons vaccinated recently, on the discovery of a case of smallpox in that vicinity. The victim was a child 4 years old.

Society News.—Dr. Charles W. Burr was elected president of the Medical Club of Philadelphia to succeed Dr. William Duffield Robinson, at the annual meeting, January 16. Other officers elected were: Drs. Paul J. Sartain and Alexander MacAlister, vice presidents; Dr. William S. Wray, secretary, and Dr. George S. Knowles, treasurer.

Personal.—Dr. Charles F. Nassau has been appointed associate professor of surgery in Jefferson Medical College.——Dr. B. Franklin Stahl was the guest of honor at a dinner given by fifty-five staff physicians of St. Agnes Hospital, January 6, marking his retirement after thirty-seven years' service in that institution.——Dr. David Marine, New York, was the guest speaker at the Philadelphia Pediatric Society, January 13. His subject was "Goiter in Children and Adolescents."——Dr. Charles H. Frazier was reelected president of the Public Charities Association of Pennsylvania, at the annual meeting and directors luncheon, Pittsburgh, January 12.——Dr. Rufus B. Weaver, whose eighty-fourth birthday was January 10, was honor guest at a dinner in the Bellevue Stratford Hotel, given by the Hahnemann Board of Trustees. Dr. Weaver has been associated with Hahnemann Medical College for fifty-six years.

TENNESSEE

Smallpox Closes Schools.—The school board of Tipton County decided, January 5, to close the Liberty, Leigh's Chapel and Bowden Schools on account of the prevalence of smallpox.

Society News.—The Knox County Medical Society voted recently to raise its dues to $15.——At the annual meeting of the Memphis and Shelby County Medical Society, Memphis, Dec. 16, 1924, Dr. John M. Maury was elected president; Dr. James B. Stanford, vice president; Dr. Arthur F. Cooper, secretary (reelected), and Dr. Thomas N. Coppedge, treasurer (reelected). Dr. G. Canby Robinson, dean, Vanderbelt University Medical Department, Nashville, addressed this society, January 6, on "Treatment of Heart Failure."——At the annual banquet of the Chattanooga and Hamilton County Medical Society, January 9, Dr. Leon T. Stem, the newly elected president of the society, and Dr. Charles B. Crittenden, the new health director of Chattanooga, gave the principal addresses.

VIRGINIA

Change in Appointments.—By virtue of the change made in the matter of appointment by the city council of Newport News, the positions of city health officer and coroner have been combined. Acting city health officer, Dr. Samuel Downing, has thus taken over the duties of Dr. Benjamin R. Gary, who was the coroner for many years.

WASHINGTON

Professional Buildings.—The Metropolitan Building Company is constructing another building, the Stimson, in Seattle, for the use of physicians and dentists, which will be connected by a subway with the Cobb Building, now used exclusively by these professions.

Society News.—At the annual meeting of the Spokane County Medical Society, January 8, Spokane, Dr. George A. Downs was elected president; Dr. Robert N. Hamblen, vice president; Dr. Robert L. Rotchford, secretary, and Dr. Mitchell Langworthy, treasurer.

WEST VIRGINIA

State Society Appoints Executive Secretary.—The West Virginia State Medical Association announced, January 8, the appointment of Sterrett Neale of Huntington, as executive secretary. Heretofore Mr. Neale has been on the staffs of Huntington and Charleston newspapers. The office of the association will be at Room 211, Smallridge Building, Quarrier Street, Charleston.

CANADA

Hospital News.—The Elgin County Memorial Hospital, St. Thomas, Ont., erected at a cost of $250,000, was recently opened.——The new Civic Hospital, Ottawa, Ont., recently opened, was built to replace the Protestant General Hospital, St. Luke's Hospital and the Ottawa Maternity Hospital. It will accommodate 600 patients, which is 150 more than was provided by the three hospitals.

Society News.—The fifty-sixth annual meeting of the Canadian Medical Association will be held in the city of Regina, Saskatchewan, during the week of June 22, 1925. The first two days will be devoted to the work of the council, the balance of the week being given over to the scientific sessions. A most cordial invitation to attend is extended to the members of the American Medical Association.——The Prince Edward Island Medical Society, having been received into affiliation with the Canadian Medical Association, December, 1924, the association now embraces the nine provincial medical associations of Canada.——The forty-eighth annual meeting of the Ontario Medical Association will be held in the city of Toronto during the week of May 4, 1925, under the presidency of Dr. George S. Young, Toronto. A novel departure is to be made this year, in that the meeting will consist of general sessions only. This arrangement will permit all members to enjoy all the program. The meeting will be held in the Crystal Ball Room, King Edward Hotel.

GENERAL

Warning.—A young man by the name of Whitaker, who claims to represent some magazine agency, has been calling on physicians in Virginia and attempting to collect subscriptions to THE JOURNAL. All authorized agents of THE JOURNAL have credentials duly signed by the secretary of the Association.

Typhoid Fever Increase.—Five hundred and fifty-eight cases of typhoid fever were reported to the U. S. Public Health Service in the week ending Dec. 20, 1924, by thirty-three states. The same states reported 262 cases the corresponding week of 1923. For the first week of the new year, 104 cities reported 307 cases of typhoid fever, their estimated expectancy being fifty-nine cases. For the corresponding week of last year, these cities reported 102 cases.

Cotton a Food Factor.—During the last season, $65,000,000 was paid for cotton seed in Texas. The South as a whole ships 700,000 barrels of cotton seed oil annually to Mediterranean ports, where much of it is used in the production of vegetable fats. Last year, cotton seed products amounted to about $275,000,000. A few years ago the seeds of cotton, being thought useless, were thrown away in such quantities they dammed up streams, and legislation had to be enacted to govern the disposal of this "waste."

American Association for the Study of Goiter.—At the annual meeting of this association, Bloomington, Ill., January 28-30, there will be operative clinics Wednesday at the St. Joseph, Brokaw and Mennonite hospitals; on Thursday diagnostic clinics and addresses, including a symposium by members of the faculty of Loyola University School of Medicine, Chicago, and in the evening a banquet under the auspices of the McLean County Medical Society, at which Dr. William Allen Pusey, President of the American Medical Association, Dr. Gordon S. Fahrni, Winnipeg, Canada, and Dr. Morris Fishbein, editor of THE JOURNAL, will speak. Friday there will be a diagnostic clinic, a round table conference and symposiums. Headquarters will be at the Illinois Hotel.

Fellowship for Women.—A candidate for the Mary Pemberton Nourse Memorial Fellowship must have a bachelor's degree or equivalent and have completed at least two years of graduate study tending toward public health work or two years of practical work in the field of public health. The fellowship has a value of $1,500, and is offered biennially. It may be used for an intensive study of special problems of public health, the study of the science of public health in some approved institution or an extensive study of public health problems and practice abroad or in this country. The committee on award is the committee on fellowships of the American Association of University Women, the chairman of which is Prof. Agnes L. Rogers, Ph.D., Smith College, Northampton, Mass.

Books for the Blind.—The Permanent Blind Relief War Fund, 730 Fifth Avenue, New York City, which is financed by contributions from all nations, recently issued a number of new titles of books put into braille, which will be distributed free to libraries maintaining departments for the blind, the only condition being that requests from the war veterans shall have precedence. Among new titles announced are "The Brushwood Boy" by Kipling and "The Three Musketeers" by Dumas. More than forty French books have also been published which will be sent to libraries on request also. The U. S. Veterans' Bureau, in cooperation with the American Foundation for the Blind, also puts books into braille, making fifteen copies of each title. These are distributed in five widely separated libraries for the use of veterans who are now back in civil life, and additional copies may be purchased from the American Printing House for the Blind, Louisville, Ky. About thirty titles have been placed in circulation, and thirty-five more are to follow.

Society News.—At the meeting of the senate of the Phi Delta Epsilon Fraternity, Boston, Dec. 25-27, 1924, Dr. James W. Smith, New York, was elected grand consul; Dr. Henry C. Falk, New York, vice grand consul; Dr. Monroe E. Greenberger, New York, grand chancellor; Dr. Aaron Brown, New York, editor-in-chief, and Dr. Henry B. Boley, New York, grand scribe. New chapters were granted at the University of Toronto and the University of Virginia.——The National Tuberculosis Association will hold its twenty-first annual meeting, June 15-20, in Minneapolis. All meetings will be at the Nicollet Hotel.——The American Heart Association has been admitted to membership in the National Health Council. It plans to expand its central office to keep pace with demands, to form contacts with all parts of this country and Canada by appointing regional representatives to obtain a large membership, to conduct educational work through the distribution of literature, to publish a monthly bulletin, to give lectures and to have one or more workers available for demonstrations in different parts of the country.——At the meeting of the American Society for Pharmacology and Experimental Therapeutics, Washington, D. C., Dec. 29-31, 1924, Dr. John Auer, St. Louis, was elected president, and Dr. Edgar D. Brown, Minneapolis, secretary.

New Directors of National Committee for Mental Hygiene.—At the recent eighth annual meeting of the National Committee for Mental Hygiene, New York, the board of directors added the following new directors to their membership:

Dr. Ray Lyman Wilbur, president, Stanford University, California; Dr. James R. Angell, LL.D., president, Yale University, New Haven, Conn.; Dr. Ernest M. Hopkins, LL.D., president, Dartmouth College, Hanover, N. H.; Dr. William H. P. Faunce, LL.D., president, Brown University, Providence, R. I.; Dr. William A. Neilson, Ph.D., president, Smith College, Northampton, Mass.; Dr. Augustus S. Knight of Gladstone, N. J., medical director, Metropolitan Life Insurance Company, New York; Dr. George L. Wallace, superintendent, State Training School for the Feebleminded, Wrentham, Mass.; Dr. Austen Fox Riggs, Stockbridge, Mass.; Dr. James M. Murdoch, superintendent, State Training School for the Feebleminded, Polk, Pa.; Dr. Charles S. Little, superintendent, Letchworth Village for the Feebleminded, Thiells, N. Y., and Mr. Harry P. Robbins, New York.

Dr. Frankwood E. Williams was reappointed medical director and President Angell, Yale University, was elected a vice president. The following were elected members of the executive committee for the ensuing year:

Dr. Arthur H. Ruggles, director, Butler Hospital, Providence, R. I., chairman; Dr. Charles P. Emerson, dean, Indiana University Medical School, Indianapolis, Ind. (Ex-officio); Dr. William A. White, superintendent, St. Elizabeth's Hospital, Washington, D. C.; Prof. Stephen P. Duggan, Ph.D., director, Institute of International Education, New York; Mr. Matthew C. Fleming, New York; Dr. George L. Wallace, Wrentham, Mass.; Dr. Harry P. Robbins, New York; Dr. Clarence Floyd Haviland, chairman, State Hospital Commission, Albany, N. Y.

LATIN AMERICA

The Cuban Medical Congress.—Among the 1,300 persons attending the Sixth National Medical Congress, which met at Havana, Dec. 14-20, 1924, were Drs. Codina Castelvi and R. Mollá, official delegates from Spain, and from the United States, Drs. G. C. Andrews, Howard Fox, S. G. Gant, L. E. La Fetra and H. Schwarz. Dr. Angel Aballí presided, and Dr. F. M. Fernández was the secretary general. The latter was chosen president-elect for the next congress, and Dr. F. Hurtado, secretary general; Dr. Carlos Moya, treasurer. Fifty-eight resolutions were adopted, recommending legislation, among others, on control of immigration, of proprietaries, of other drugs and foods; foundation of a training school for health officers; means to facilitate vital statistics; necropsies in the hospitals; protection of the public by stricter enforcement of the laws against quackery, and an official odontologic service throughout the country.

Personal.—The Academia de Medicina at Lima, Peru, has elected as foreign members six Mexican scientists, Drs. Angel Brioso y Vasconcelos, Gabriel Malda, F. Ocaranza, T. G. Perrin, Daniel M. Vélez and Prof. Isaac Ochoterena. Dr. Ocaranza is president of the Sociedad de Biologia and Professor Ochoterena is the perpetual secretary. Perrin was a charter member and Malda is an active member. Dr. Brioso is editor of the *Gaceta Médica*, and has published works on venerology. Dr. Perrin's work has been mainly on the bacteriology of typhus. Dr. Vélez is editor of the *Anales de Oftalmo-rino-laringologia*, and is president of the Mexican Medical Association. Dr. Malda, surgeon and sanitarian, was formerly director of the national public health service.——A gold medal was recently presented to Dr. Pedro J. Garcia, Buenos Aires. It bears the inscription "The Seal of Friendship to Dr. Pedro J. Garcia, from his classmates, 1906-1907."——Dr. Miguel Cella, Buenos Aires, has been sent to Europe by the health department to study welfare work.——Dr. R. Araya, dean of the medical faculty of the La Plata University, has been commissioned by the university and the minister of public instruction to study the organization of medical education in Europe.

FOREIGN

Special Course in Ophthalmology.—Peking Union Medical College has arranged a course in ophthalmology to be given in the Chinese language this year. This is the first course arranged by this college to be given in the native language.

Scandinavian Medical Congress.—The twelfth Scandinavian Congress on Internal Medicine will convene at Stockholm, Aug. 27, 1925. The subjects appointed for discussion are "Pathogenesis of Jaundice" and "Liver Function Tests." The discussions are to be opened by Meulengracht, O. Scheel and Tillgren. Further particulars may be obtained from the secretary, Dr. G. Rystedt, Stockholm.

International Surgical Society.—Dr. L. Mayer, rue de la Loi 72, Brussels, Belgium, secretary of the Seventh Congress of the International Surgical Society, to be held at Rome, April 7-10, 1926, sends a list of the five topics appointed for discussion, as follows: "Curietherapy of Uterine Cancer"; "Treatment of Brain Tumors"; "Surgery of the Spleen"; "Abscess of the Liver," and "Remote Results of Treatment of Jacksonian Epilepsy."

Fellowship Awarded to Sir James Mackenzie.—The University of Toronto, Canada, has awarded the Charles Mickle Fellowship to Sir James Mackenzie, honorary physician to the king, in Scotland. This fellowship is awarded annually to that member of the medical profession whom the council considers to have done most during the preceding ten years to advance sound knowledge of a practical kind in medical art or science. Its annual value is about $1,500.

Portrayal in Art of the Wounded.—One of the features of the approaching international congress on military medicine (Paris, April 21, 1925) is to be an exhibition by French artists of works depicting the wounded in war. The scope of the exhibition includes painting, sculpture, drawing, architecture, the decorative arts and books, but they must conform to a high standard of art for acceptance. The Salon du Blessé will be open to the public for a few weeks before and after the congress.

Society Elections.—The Ateneo de Ciencias Médicas of Malaga recently elected Dr. A. Ramos Acosta, president; Drs. R. Pérez Bryán and M. de Mérida Nicolich, vice presidents; Dr. A. Ayuso Salvador, secretary general, and Dr. J. Dominguez Luque, secretary.——The Spanish Academia Nacional de Medicina, Madrid, has reelected all its former officers, this being the sixth time Dr. Carlos Maria Cortezo has been elected president since 1913. Dr. Fernández Caro is the vice president elect.

Institute for Research in Physical Training.—Dr. Toyokichi Kita, director of the bureau of school hygiene, has been appointed superintendent of the Institute for Research in Physical Training at Yoyohata, a suburb of Tokyo. The building will be completed this year. Attached to the main building will be a large gymnasium, fully equipped with running track, swimming pool, tennis courts and other special features. In order to carry on theoretical studies in physical training, athletic classes will be held under the institute authorities.

The Medico-Legal Society.—Under the presidency of Lord Justice Atkin, the annual dinner of the Medico-Legal Society was held in London, December 12. Sir William Collins, in whose hands was the customary toast, "Law and Medicine," said that in Germany the common ground between the two professions was spoken of as state medicine, in France as "médecine légale" and in England as medical jurisprudence, which was the title of the first work on the subject in English by Samuel Farr, published 1788. Sir Humphry Rolleston, president, Royal College of Physicians, responded to the toast on behalf of the medical profession, and Mr. T. R. Hughes, K. C., president, General Council of the Bar, responded on behalf of the legal profession.

Deaths in Other Countries

Herbert Williamson, physician accoucheur to St. Batholomew's Hospital, London, recently, aged 53.——**Dr. Mendes de Leon,** director of the Boerhaave clinic for women at Amsterdam.——**Dr. Francis Villar,** professor emeritus of surgery at Bordeaux.——**Dr. Enrique Fynn,** Buenos Aires, noted for work on proteolytic ferments, especially in relation to derivatives of milk, aged 53.——**Dr. Leonidas Porto,** professor of clinical medicine at Rio de Janeiro.——**Dr. Charles Vallon,** Paris, former president of the Société médicopsychologique and of the Société de psychiatrie, aged 71.

Government Services

General Noble Retires

Brig. Gen. Robert E. Noble, assistant surgeon general, U. S. Army, will retire from active service, on his own application, with the rank of major general, February 8. General Noble was for seven years assistant to General Gorgas during the construction of the Panama Canal and for four years his assistant in Washington, D. C. Recently General Noble has been on duty at the Surgeon General's Library.

Bill to Commission Veterans' Bureau Physicians

Director Frank T. Hines, Veterans' Bureau, in a letter to President Robert Catherwood, National Civil Service Reform League, vigorously supports the bill to establish a medical service in the Veterans' Bureau. The Reform League had objected to this legislation and asserted that physicians in the Veterans' Bureau should be selected by the Civil Service Commission. In his reply, Director Hines stated that the medical activities of the Veterans' Bureau, conducted in forty-eight hospitals throughout the country, necessitated a certain mobility of personnel which is not possible unless physicians are placed on a commissioned status with definite assurances of permanent employment. The government, he said, has spent approximately $50,000,000 in the construction of hospitals, unequalled by any in the world. Nothing has been spared in providing equipment and facilities to render the highest type of professional service to the disabled men. It is the duty of the Veterans' Bureau, continued Director Hines, to provide the highest type of professional talent to go with such equipment. It is difficult for the director to understand the Reform League's stand when consideration is given to the magnitude of the problem of the bureau in this regard. Director Hines asserts that there is greater justification for commissioning this personnel than that of the U. S. Public Health Service, and that their duties are closely associated with the type of service performed by the medical corps of the army and navy.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 10, 1925.

A Healthful Year

The year just closed ranks among the most healthful ever experienced in this country, notwithstanding the widespread depression of trade and unemployment. It is true that the death rate was slightly higher than in 1923, but this was due to the prevalence of influenza last winter. Moreover, 1923 was the most healthful year ever known in this country.

Vital Statistics for 1924 in One Hundred and Five Large Cities of England and Wales

	Births per 1,000 Population	Deaths per 1,000 Population	Infant Deaths per 1,000 Births
1921.....	23.3	12.3	87
1922.....	21.4	13.0	82
1923.....	20.4	11.6	72
1924.....	19.3	12.4	79

The summer, autumn and early winter of 1924 have been the most healthful ever recorded. The falling birth rate, as the table shows, continues.

Bankruptcy of "Yadil"

The press exposure of "Yadil," the most blatantly advertised of all the nostrums, has been described in previous letters. The result is the bankruptcy of what promised to be a very lucrative business. The disclosures at the statutory meeting of the creditors are interesting, for here at last we get the truth—a difficult attainment where nostrums are concerned. The official receiver, who presided, said that the business was registered as a private company in the name of the Quality Press, Ltd., in June, 1923, with a nominal capital of $42,500, with the object of carrying on business as printers and publishers. It was, in fact, formed in the first place to supply a company called Clement and Johnson, Limited, the proprietors of the various medicines known under the name "Yadil," with the circulars, labels and direction slips required by them. June 25 last its name was altered to Yadil Press, Limited, and at the date of winding up the directorate, consisted of J. G. A. Clement, R. R. Brown, Major R. C. C. Long, Sir George T. Forestier-Walker and Lieut.-Col. Jack Giffard. The nominal capital was from time to time increased, and eventually stood at $1,250,000, being a million cumulative preference shares of $1 each and a million ordinary shares of 25 cents each. The issued capital was $100,000. The company appeared to have been promoted by Mr. J. G. A. Clement, who formerly conducted the Quality Press. June 25, it entered into an agreement with Clement and Johnson, Limited, by virtue of which it acquired the right for twenty years to supply that company with all labels and advertising devices, to place all publicity for newspapers and motor omnibuses, and to print and publish the "Yadil" books. A prospectus was issued next day offering 915,825 preference shares, 84,175 having already been taken up by the directors and their friends. The response, however, was very poor; applications were received for only 57,526 shares, while those actually allotted represented capital amounting to $55,000. But the cost of the issue absorbed $45,000, and thus only $10,000 became available for working capital. The prospectus contained very optimistic estimates of the profits to accrue, and the directors submitted that they were justified by the fact that the sales of "Yadil" had increased from $7,500 a month early in 1923 to $150,000 a month by June last. However, the prospectus omitted to state that Clement and Johnson, Limited, owed the Yadil Press, Limited, $85,000, that it had debentures outstanding to the amount of $240,000, and that its paid-up capital was only $2,400. Possibly, said the receiver, the disclosure of such facts might have deterred the unfortunate persons who applied for shares in the Yadil Press, Limited. Last July the press attack was made on Yadil, as previously reported in THE JOURNAL, disclosing its ingredients as ascertained by chemical analysis. The result was a cessation of the business. A balance sheet prepared as of June 30 showed a profit of $15,000, and accounts prepared by the voluntary liquidator as of October 25 last showed a subsequent loss of $5,000. A statement of affairs showed liabilities of $20,000 and assets of $3,400, to which must be added $3,000 derivable from the sale of the machinery. The shareholders' deficiency stood at $150,000. A claim for misfeasance might be made against the directors, who were also directors of Clement and Johnson, Limited, in respect of losses sustained in the transactions between the two companies.

A shareholder said he thought another asset should be brought before the receiver. He submitted that there was a valid claim against the authors of the alleged libel which had brought about the company's failure. The proprietors of "Yadil" immediately entered an action for libel, but met with extraordinary difficulties. They were told that the costs would amount to $250,000 and were advised not to proceed with the action. This advice is not surprising, considering that the analysis of an eminent chemist showed that the preparation was quite worthless and yet it was being advertised, among many other things, as a cure for cancer and tuberculosis. So ends one of the most widely advertised and audaciously exploited nostrums. But it differs only in degree from hundreds of others that are advertised daily and weekly in our leading journals. These make ridiculous claims to cure all sorts of disease, but their proprietors are too wary to do anything so glaring as the "Yadil" people have done.

Verdict of Manslaughter Against a Physician

A case has terminated at the central criminal court which is almost unprecedented in two respects: a physician was convicted of manslaughter in the course of his professional work, and the cause which gave rise to the charge was an extraordinary obstetric accident. He was called to a woman who had been in labor for two days. According to his evidence, he found the head presenting and applied forceps; they slipped because the presentation was transverse. He then decided to perform manual version. On inserting his hand into the vagina he found the feet. When turning the body, there was considerable difficulty because the head was also in the pelvic cavity, firmly impacted. He continued the treatment for more than an hour and finally delivered a dead child. He inserted his hand into the uterus and brought away the placenta quite easily and without the use of any force. He put it in a bowl without looking at it very carefully, as the patient had collapsed and he had to attend to her. The room was badly lighted. After the woman rallied he put his hand on the abdomen to find whether the uterus was contracting, but could not find it. On examining the bowl, in which the placenta had been put, to his surprise he found the uterus also. The patient was in a collapsed state and unfit to be removed. He knew that an operation would be necessary to save her life, but he came to the conclusion that she would never survive it. Not wishing to shock the relatives, he told the nurse to say nothing about the uterus having come away. He attended the woman for five days, during which she was never well enough to stand an operation. As the family was all worn out he then ordered her removal to a hospital, where she died two days later.

In evidence for the prosecution, Sir Bernard Spilsbury (pathologist and medicolegal expert) gave the opinion that if the woman had been operated on she would have had some chance of surviving and that she would have been fit for operation before removal to the hospital. For the defense, Dr. J. Bright Banister, obstetric physician to Charing Cross Hospital, said he knew of only two other cases in which the uterus had been removed. In both, no operation was performed because one patient died on reaching the hospital and in the other within thirty minutes of reaching it. Therefore he did not consider that the conduct of the accused in keeping the patient lying at her house for five days accelerated her death. Her chance of life was almost negligible. He would have forbidden removal. Some time during the five days following the labor there was just a chance that she could have been removed and would have had a chance for a successful operation. If there was a complex presentation, as the accused said, the case was most difficult. Dr. Hubert Roberts, senior obstetric surgeon to Queen Charlotte's Hospital, gave similar evidence. In cross-examination he agreed that it would have been advisable for Dr. Bateman to have a consultation.

In summing up, Mr. Justice Shearman said that every physician was required by law to show a reasonable amount of skill according to the circumstances of the case, though not so much skill as a specialist. He could be convicted criminally only if he fell below this level. He left it to the jury to say whether death was caused or accelerated by the treatment. Was the patient's chance of living, whatever it was, taken away by the physician's attitude? The evidence concerning the necropsy showed that the uterus was ruptured, and also the bladder and intestine. The prosecution said that the physician produced all these injuries and that when he attempted to remove the placenta he caught hold of some tear or slit in the torn uterus and with a tug pulled it away and thus was guilty of gross negligence. Dr. Spilsbury had given evidence that considerable force would have been required to pull away the uterus. It came away with one ovary and tube attached to it. But the defense said it might have come away easily, owing to previous damage, which could be explained by the difficulty of the case. The prosecution further stated that whether the physician was guilty of gross negligence up to that point or not, he was guilty of gross dereliction of duty in doing nothing for the woman afterward. Did he refrain from sending her to the hospital in order to avoid an inquiry? The experts for the defense agreed that it would have been a good thing to try something in the nature of drainage, but considered that operation was hopeless. The jury found a verdict of guilty of manslaughter, and the judge passed a sentence of six months' imprisonment.

BELGIUM

(From Our Regular Correspondent)

Jan. 6, 1925.

Pneumonia Among the Black Races

The extreme gravity and the marked contagiousness of pneumonia among the black races are well known. These facts have been especially noted in the military instruction camps. Among all groups of the black races that have left their native country for the first time and come in contact with other races more or less immunized, pneumonia spreads with rapidity and increases to an extreme virulence, causing frightful epidemics. Dr. Kadaner has recently called the attention of the Société belge de médecine tropicale to the fact that every camp containing several hundred members of the black races should have a preparatory detention camp in case new nonimmunized workers are received from time to time, in order that they may not come in contact at once with those of their race who have been some time in camp. Contact should be brought about slowly and under proper precautions. Such a system of progressive acclimation would render great service in combating the dangers of epidemics of pneumonia.

The Antivenereal Crusade and Prostitution

The Association des médecins hygiénistes of Belgium met recently to discuss the value of the regulation of prostitution as a factor in the crusade against venereal diseases. All who presented papers on the subject pronounced themselves in favor of a form of regulation, consisting of supervision and obligatory treatment under medical control supported by necessary rights and powers. Dr. Bernard reported some significant figures based on the observation of more than 4,000 subjects and including more than 70,000 consultations. In this large group he did not note a single case of contamination that arose in connection with official control, from which it is evident that the majority of the cases of infection arise from clandestine prostitution.

At the close of this exchange of views, the assembly passed the following resolution:

As it is in the interest of public health that the crusade against venereal disease shall be effective; considering the menace that lies in the spread of venereal diseases through prostitution, and recognizing the need of combating such spread, this assembly holds that only early, continued, supervised and, possibly, compulsory treatment can secure favorable results, and it is the duty of the public authorities to organize on a scientific basis the prevention and the treatment of venereal affections; it recommends further that the public authorities come to an understanding with the social welfare organizations, in order that the latter may render assistance in the promotion of public morals.

The University of Brussels

The ninety-first anniversary of the founding of the University of Brussels was celebrated in 1924 with unusual magnificence. This traditional ceremony was made to coincide with the laying of the cornerstone of the new university buildings. It is well known that the University of Brussels is indebted to the liberality of the Educational Foundation of the Commission for Relief in Belgium, the resourcefulness of Mr. Herbert Hoover and the generosity of the American people for the bestowal of important gifts that have made the realization of this plan possible.

Before an enthusiastic assemblage consisting of the king of Belgium, the Duke of Brabant and government officials, together with the diplomatic corps and representatives of the principal universities of France, the United States of America, Great Britain, Holland, Italy, Spain, Japan, Switzerland and Denmark, the imposing ceremony of the laying of the cornerstone was held. The opening address was delivered by Dr. Paul Héger, who expressed the gratitude of Belgium to the United States. Addressing himself to the American ambassador, Dr. Héger eulogized the Commission for Relief in Belgium, and the work of America in philanthropy.

At the close of the ceremonies, the following cablegram was addressed to Mr. Herbert Hoover, chairman of the Educational Foundation of the Commission for Relief in Belgium: At this fitting moment, when his royal highness, Prince Leopold of Belgium, has just placed the cornerstone for the new university buildings for which we are indebted to the Educational Foundation of the Commission for Relief in Belgium, the University of Brussels as a whole, including administrators, professors and students, sends you this expression of its deepfelt gratitude and its profound appreciation of the character of the American people.

Committee on Specialisation in Medicine

The discussion that arose, some time ago, within the Royal Academy of Medicine concerning the abuse of the title of specialist, and the crusade against charlatanism in medicine and pharmacy, is still being continued. It will be recalled

that a resolution was passed by the Royal Academy of Medicine to the effect that it is not necessary to hold a special diploma in order to practice a specialty. According to this resolution, the abuses that are known to exist by all who practice the medical profession cannot be reached. But it is absolutely necessary that some corrective for the present state of affairs be found. The academy has now approved the idea of creating a council of physicians on ethics, and a similar council of pharmacists, with a view to suppressing the abuses that escape legislative control at present. The text of the resolution provides for the creation of a commission to draw up a legislative project for submission to the government.

Virus Vaccine in Epidemic Encephalitis

Having continued his researches in accordance with the indications established by Lévaditi, M. Le Fèvre of Arric recently communicated to the Société clinique des hôpitaux de Bruxelles his results from vaccinotherapy in epidemic (lethargic) encephalitis. The vaccine consists of properly diluted emulsions of a rabbit's brain removed during the virulent stage of the disease. Following injections of the vaccine, the reactions of patients may be nil, moderate or intense. If they are intense, a temporary aggravation of the symptoms precedes improvement. The results reported were: a manifest improvement in two cases out of two of acute encephalitis, and two cases of slight improvement in nine cases of postencephalitic parkinsonian syndrome. The method appears to present no dangers.

Epidemic Encephalitis

Before the Société belge de médecine mentale, Dr. Massaut communicated recently the results of his observations on cases of epidemic encephalitis He referred to several points that would appear to be important from the standpoint of the semeiology of the disease. The various patients did not present the same clinical picture. In some patients, the physical symptoms predominated. In other patients, disorders of a psychic nature were in the ascendency. The mental symptoms were observed more particularly in young patients from 16 to 17 years of age. The diagnosis was even difficult to decide in one patient, aged 17, presenting frank disorders of character without physical symptoms. The question was, however, soon settled following the rapid appearance of other unmistakable symptoms. The author, basing his opinion on a recent observation of a case in which a careful examination failed to reveal symptoms of epidemic encephalitis in a patient who, several weeks later, presented a parkinsonian syndrome, feels justified in believing that there are cases of Parkinson's disease that are not associated at all with epidemic encephalitis.

Military Fitness and Psychiatry

Dr. Gobert, attached to the psychiatric service of the army, has published a statistical report bearing on the years from 1919 to 1924 and including all the cases in which soldiers have been dismissed from the army by reason of mental disease. The number of recruits admitted each year, during the last few years, has been approximately the same.

The author divides the patients into five groups: (1) hysterical cases, (2) epileptics, (3) the mentally defective, (4) the disoriented, degenerates, those with sequels of a psychosis or subject to temporary attacks of psychosis, and (5) mental and nervous troubles of an indeterminate nature. He secured the following results: In 1919, the 192 dismissed were distributed among the five groups as follows: (1) 62, (2) 18, (3) 36, (4) 47 and (5) 29. In 1920, the 521 dismissed were distributed among the five groups thus: 176, 36, 70, 185 and 54, respectively. In 1921, the 390 dismissed were divided thus among the five groups: 106, 59, 51, 157 and 17. In 1922, the 277 dismissed were thus distributed: 45, 45, 44, 139 and 4. In 1923, the 253 dismissed were classed among the five groups in the following manner: 80, 19, 38, 107 and 9.

The Profession of Dentistry

In a previous letter I referred to a resolution passed by the Royal Academy of Medicine in regard to the proposed law concerning the practice of the profession of dentistry. The general association of Belgian dentists has since considered the subject and has approved the general plan of the academy, though demanding certain modifications of details. It demands—and that is the main point under discussion with the Academy of Medicine—that the art of dentistry, which is clearly separated from medicine in the countries in which it has reached its highest degree of development (United States, Switzerland, Spain, Holland and Japan), shall be made distinct from medicine in Belgium. The association demands further that the proposed law shall take notice of such separation and shall provide that a doctor of medicine who desires to practice dentistry must first secure the form of diploma granted to the licentiate in the dental art.

Roentgen Irradiation of the Respiratory Passages

Before the Société belge d'études scientifiques de la tuberculose, the establishment of which I mentioned in a recent letter, Dr. Toussaint has presented a communication on the use of an iodized fat as a contrast agent in roentgenographic examination of the respiratory tracts. He pointed out the extreme sensitiveness of the contrast agent to the laws of gravity. He endeavored to show the reasons why this product has a preferential tendency to find its way into diseased areas and stop there. His anatomicopathologic observations tend to show that roentgenograms of cavities are often deceptive in that they indicate less loss of substance than exists, and that the enlargement of the shadows of the hilum in tuberculous adults gives rather the impression of a bronchial dilatation than of an involvement of the lymphatic and vascular tissues.

BERLIN

(From Our Regular Correspondent)

Dec. 27, 1924.

Berlin's Low Birth Rate

Dr. Felix A. Theilhaber, chairman of the Gesellschaft für Sexualreform, has published an article in the *Archiv für Frauenkunde und Konstitutionsforschung*, which sheds certain sidelights on the unprecedented fall in the birth rate of Berlin.

The highest birth rate (a total of 45,000 living births) was reached in 1890. Immediately before the war, the total number of births (around 30,000 children) corresponded to the total recorded for the early seventies (1870-1875). Just after the war, the birth rate rose again to about that registered for 1914. Since then it has been constantly sinking and is approaching the lowest record registered, that of the year 1917 (15,000).

A clearer idea is obtained by comparing the number of births with the number of marriages. A population in which all adults were married would hold its own if there were two children born to each married couple and if the children survived. But in reality two children to a family would not suffice, since the birth rate must be high enough to compensate for those who do not marry. Theilhaber points out that even at the beginning of the century the number of persons entering on the marriage relation each year was greater than the number of living births, and that today the relation is as 2:1; that is, for every two persons marrying there is, on the average, only one child born.

In the ninth decade (1880-1890), Berlin families with five and more children were not particularly scarce. Since that period, a development has set in which, with almost mathematical regularity, has worked toward the elimination of families with five and more children. The adjoined figures (the records for the war years omitted, as being exceptional) show the rate of decrease in the size of Berlin families for the period from 1880 to 1920. A comparison is made between the year of this period in which the largest number of children of a given position in the series (the first child, the second child, and so on, up to the eleventh child) is recorded with the year in which the smallest number of children of the same position is registered.

	Highest Record	Lowest Record	Approximate Percentage
The eleventh child	1,000	71	7
The tenth child	700	70	10
The eighth child	1,500	150	10
The seventh child	2,000	200	10
The sixth child	3,000	350	12
The fifth child	4,000	600	15
The fourth child	5,500	1,000	18
The third child	7,000	2,000	35
The second child	10,000	6,500	65
The first child	15,000	10,000	66

From another angle, for every 100 first born there were in 1870 ninety "second" children; in 1910, seventy-seven second children, and in 1923, forty-four second children.

In 1913, there were approximately 10,000 illegitimate children born in Berlin, but during the war years the number fell to 4,000. In 1921, the number had increased to nearly 6,000. Since 1921, the number of illegitimate children has constantly decreased, and the last record of 3,000 is less than a third of that for 1913.

Whereas, in 1914, of each hundred primiparas forty-nine were under 25 years of age, in 1921 there were only thirty-nine belonging to that age group. In 1914, forty-five out of 100 of the mothers were under 35 years of age, while in 1921 fifty-five of the mothers were members of that age group. In 1914, sixteen out of 100 mothers were more than 30 years old when their first child was born; in 1921, twenty-three of the primiparas were of that age group.

In closing, Theilhaber remarked that, although the birth rate of Berlin is only half that of France, this does not signify that the moral plane is 50 per cent. lower than that of France. It is, in his opinion, only a proof that, owing to the bad economic situation, parents feel the additional financial burden caused by an increase in the family, and endeavor to cope with the crisis by voluntary limitation of the number of births. In view of the strong yearning of many women to fulfil their destiny as mothers, the decline in the birth rate is to be taken as a sign of the present disturbance of our social order. But, in the final analysis, the decline may prove to be fortunate at a time like this, when the value of human life seems unrecognized and the world seems already overpopulated. Possibly we may regard the fall in the birth rate as a healthy reaction against what seems at times an unwise and an uncontrolled overpopulation of the large cities and even the rural districts of the world. It will remain for the future to decide what effect on culture this period in our development will have exerted and to utilize any possible good effects that may result, toward the advancement of human happiness.

Attempts to Influence in Mammals the Numerical Relationship of the Sexes

In the *Archiv für Rassen- und Gesellschaftsbiologie*, Dr. Agnes Bluhm gives an account of her attempts to influence in mammals the relationship of the sexes. By special treatment of the male white mouse with alcohol, yohimbin and caffein, she was able markedly to increase in a considerable number of mice the proportion of males among the new offspring, whereas similar treatment of the females had no effect on the proportion of the sexes. We may conclude from these results that in mammals the male germ cells exert a deciding influence on sex, and that consequently there must be two kinds of spermatozoa, one from which male and one from which female offspring develop. Since all three drugs by which the author brought about a shifting of the numerical relationship of the sexes have in common only the power to influence movements of the plasma, it is highly probable that the two kinds of spermatozoa are distinguished physiologically by a different form or rate of motion, which plays a part in fecundation.

Death of Trendelenburg

Professor Trendelenburg, who for many years was the director of the surgical university clinic in Leipzig, died in Berlin, December 16, at the age of 80. He was the son of Adolf Trendelenburg, professor of philosophy. He spent his period of academic study partly in Edinburgh and Glasgow, where in the home of Allen Thomson, the anatomist, he found inspiration and guidance. Trendelenburg served in the wars of 1866 and 1870, and in 1874 was appointed director of the surgical department in the newly erected municipal hospital in Friedrichshain. A year later he was called to the University of Rostock as head professor, and later to the University of Bonn. In 1895 he removed to the University of Leipzig. Trendelenburg was one of the first to develop surgery of the joints. Of his other works we may mention those on gastrostomy, which were of great importance for the development of this field; also his monographs on diphtheria and tracheotomy. Among Trendelenburg's publications from the Bonn period, those advocating the Trendelenburg position in certain operations contained entirely new and important ideas. It was for operations on the bladder that he first worked out the technic of this method. In fact, it is only since the application of this method that we have had a systematic surgery of the true pelvis. For the better use of his technic, he constructed a special type of operating table. Also his articles on the treatment of varicose veins are important. We are further indebted to Trendelenburg for researches on the symptom of wobbly gait in dislocation of the hip, on the operation for a crooked nose, and on injuries and surgical diseases of the face. His operative removal of a large embolus from the pulmonary artery, which I reported in a previous letter, attracted considerable attention.

Death of Morgenroth

J. Morgenroth, *Geheimer Medizinalrat*, professor at the University of Berlin and department director at the Robert Koch Institute for Infectious Diseases, died, December 20, from pernicious anemia, at the age of 52.

Morgenroth was born at Bamberg, Oct. 19, 1871. He devoted himself first to theoretical studies in the laboratories of Weigert and Edinger in Frankfort-on-the-Main. From there he removed in 1897 to the institute for the testing of diphtheria serum, in Steglitz, of which Paul Ehrlich was director. When Ehrlich was appointed director of the Institute for Experimental Therapy, which was erected for him in Frankfort-on-the-Main, Morgenroth continued as his assistant and became later a scientific member of the institute. In Frankfort, Morgenroth published many important monographs on subjects pertaining to the theory of immunity and on the destructive action of bacterial products on the blood; on the so-called hemolysins, and many kindred matters. For further study of these subjects he spent some time at the Zoologic Institute in Naples. In 1905, he became an assistant of Orth, director of the Pathologic Institute of the University of Berlin. He was later appointed head of the bacteriologic department. In 1911 he accepted the directorship of the new chemotherapeutic department of the Robert Koch

Institute for Infectious Diseases. During the war, he devoted himself to the study of chemotherapeutic antisepsis, paying especial attention to the disinfection of large war wounds. After Morgenroth was called in 1919 to the Robert Koch Institute for Infectious Diseases, the study of chemotherapeutic antisepsis was continued on a broad experimental basis. An amplification of the method of research was brought about by systematic experiments with antiseptic dyes. In recent years, Morgenroth instituted researches on the biology of the several varieties of coccus, on trypanosomiasis and a further analysis of chemotherapeutic action. Up to a short time before his death, he was engaged in researches on malaria and its treatment, by the aid of unique forms of experiment.

RIO DE JANEIRO

(From Our Regular Correspondent)

Dec. 15, 1924.

Second Brazilian Public Health Congress

There has just been held at Bello Horisonte the Second Brazilian Public Health Congress. The first meeting was held last year in this city. The congress, as suggested by its name, purposes to help in solving sanitary problems of Brazil through appropriate measures directly based on our needs, and carried out in accordance with prevailing local conditions. There were many subjects discussed. Epidemiologic questions were among the foremost considered, the resolutions adopted favoring both technical and administrative unification of public health laboratories, extension of home isolation in infectious diseases, sanitary education and supervision through visiting nurses.

As regards psychiatry, in a symposium entitled "What Has Already Been Done and What Can Be Done in Mental Hygiene in Brazil?" valuable papers were presented and discussed by Drs. Juliano Moreira, Plinio Olinto, Ernani Lopes, Heitor Carrilho, Cunha Popes and J. P. Fontenelle. All existing agencies for mental assistance and prevention, as well as the cause of psychic degeneration, were carefully reviewed. As a result, it was shown that much improvement has already taken place as regards relief of mental cases.

In the section on school hygiene, a number of physicians presented papers describing the establishment of standards for diagnosis and correction of abnormalities, defects and diseases of infancy. There was also pointed out the advantage of substituting the present theoretical teaching of hygiene in the schools for actual sanitary education in order that the pupils might receive object lessons, impressing them with the need of cleanliness and healthful habits. There was much discussion regarding the addition of school hygiene to the duties of the national public health department.

In the section on rural hygiene, especial attention was devoted to the new products recommended for the prevention of hookworm disease and malaria, and also to antimalarial drainage works. Attention was called to the need of establishing uniformity in the methods used in several states for collecting vital statistics. In connection with this, reference was made to the morbidity and mortality of cancer in Brazil. There were several industrial sanitation subjects discussed. However, the subject on which most stress was made was the creation of a school of hygiene and public health, as suggested several years ago by a number of Brazilian sanitarians. Several papers were presented on this subject, showing the need of an independent technical school devoted to public health, in order that Brazil might, as done now in England, and above all in the United States, form competent experts and professionals fully acquainted with sanitary work. This was the outstanding idea in the last session of the congress. Let us now hope that the Brazilian government may carry out the suggestion.

Aortic Roentgenology

Dr. Manoel de Abreu, a radiologist, presented at the November 27 session of the National Academy of Medicine a preliminary note describing his studies on roentgenology of the aorta. He showed that the shadow usually attributed to the ascending aorta is in fact the opaque vascular zone between the aorta and the pulmonary artery. Its visibility is due, on one side, to the translucidity of the left lung, and, on the other, to the transparency of the trachea and the left bronchus. Dr. Abreu has come to these conclusions: 1. The vessels of the heart pedicle or base are not visible, by themselves. Their massiveness, and the identity of their caliber with that of the opaque mediastinal structures in which they are enclosed, do not allow any roentgenologic contrast. 2. The classical process of measuring the diameter of the ascending aorta in the oblique-lateral and anterior-posterior positions is completely false. In the right anterior oblique position the diameter is hardly the distance that separates the outline of the aorta from the trachea and the left bronchus. The measurements vary in accordance with the obliquity of the observation plane; in the left anterior slanting position, its diameter represents the space between the margin of the vena cava and the trachea. 3. The shadows on a mediastinal plate belong to the larger bronchial tubes. The borders of this transparent zone sometimes coincide with the invisible outlines of the vessels of the base. The diameter of the aorta can be determined only by studying thoroughly this coincidence. 4. Either in a right or a left anterior oblique position, at an angle from 0 to 30 degrees, according to the age of the person, the arch of the aorta is seen lengthwise, and the distance from the left lateral or anterolateral border to the corresponding margin of the trachea above its bifurcation expresses approximately the diameter of the aorta. 5. The diameter thus obtained may be larger than the actual diameter, but not smaller. It will be larger if the arch is not in perfect alinement. Therefore, one should allow 2 mm. for the cell tissue and the two pleural sacs that envelop the aortic border, and 2 mm. for the thickness of the tracheal wall. 6. In case of dilatation or aneurysm of the vessels of the aorta or tumors of the mediastinum, the topographic situation of the trachea and the bronchi, as shown by the teleroentgenogram, is of capital importance, since they are the only transparent structures to show amid the opaque thickness of the mediastinum.

A Martyr to Science

December 7, instant, the Brazilian medical profession, represented by the National Academy of Medicine and the Society of Medicine and Surgery of Rio de Janeiro, rendered an extraordinary tribute to the radiologist Dr. Alvaro Alvim. Dr. Alvim has just been operated on for the second time because of a serious radiodermatitis acquired in the exercise of his profession. Dr. Alvim many years ago introduced the use of roentgen rays in Brazil. During five years, he has been showing symptoms of a serious radiodermatitis which has compelled him to make several trips to Europe. After trying all known treatments, he has made several reports to medical societies on his case. Unfortunately, as his suffering increased, his right hand had to be amputated. On his return to Rio de Janeiro, he kept on at his chosen profession. The result is that he has now been compelled to submit to the amputation of three fingers of the left hand. This martyr to science was granted the distinguished medal by the National Medical Congress. This is rather exceptional in Brazil. When the time came to deliver this reward, the medical societies mentioned above held a special meeting under the presidency of Prof. Miguel Osorio, at which appropriate speeches were made by Professors Dias de Barros, Aleixo de Vasconcellos and Fernando Magalhães.

Marriages

WILLIAM J. B. OSA, Smithfield, N. C., to Miss Lola Marguerite Miller of Washington, D. C., Nov. 26, 1924.

WILBUR S. HARGROVE to Miss Anna E. Arnett, both of Hickory, Ky., at Jeffersonville, Ind., Dec. 11, 1924.

FREDERICK EBERSON, San Francisco, to Miss Gertrude Dorothy Lachman of Berkeley, Calif., January 4.

LAWRENCE SHERWOOD CAREY, Lewes, Del., to Miss Bonwen May Williams of Broomall, Dec. 3, 1924.

CARL NORDLERT to Mrs. Ines M. Rocha, both of Somerset, Ky., at Lakeworth, Fla., Dec. 25, 1924.

Deaths

John Marshall, Philadelphia; University of Pennsylvania School of Medicine, 1878; dean of the faculty of veterinary medicine, 1889-1897, dean of the faculty of medicine, 1892-1902, professor, 1897-1922, and since 1922, emeritus professor of chemistry and toxicology at his alma mater; member of the American Physiological Society, and the Society of Biological Chemists; co-author of "A Course for Systematic Qualitative Testing," and a contributor to American and German chemical journals; aged 69; died, January 5, following a long illness.

Isidor Teplitz, Brooklyn; University and Bellevue Hospital Medical College, New York, 1905; member of the Medical Society of the State of New York; on the staffs of the Unity, Bushwick, Brownsville and East New York hospitals; aged 41; died suddenly, January 8, of angina pectoris.

Charles Ellsworthe Powers, Butler, Mo.; Central Medical College of St. Joseph, 1897; member of the Missouri State Medical Association; served in the M. C., U. S. Army, during the World War; aged 49; died, Dec. 29, 1924, of a self-inflicted bullet wound, while suffering from ill health.

Pierre Leon Cusachs, Mandeville, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1856; member of the Louisiana State Medical Society; aged 55; died recently, at Touro Infirmary, New Orleans, of bronchopneumonia and aneurism of the aorta.

William Beverly West, Fort Worth, Texas; College of Physicians and Surgeons, Baltimore, 1885; member of the State Medical Association of Texas; formerly professor of dermatology and syphilology at the Fort Worth School of Medicine; aged 64; died, Dec. 26, 1924.

William McKay, New York; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1878; member of the Medical Society of the State of New York; on the staff of the New York Eye and Ear Infirmary; aged 74; died suddenly, January 7, of heart disease.

Charles Francis Smith, Des Moines; Drake University College of Medicine, 1898; member of the Iowa State Medical Society; served in the M. C., U. S. Army, during the World War; formerly member of the board of education; aged 52; died, Dec. 28, 1924.

Oscar C. Dilly, Louisville, Ky.; Kentucky School of Medicine, Louisville, 1900; dean of the Louisville College of Pharmacy; also a druggist; formerly member of the state board of health; aged 58; died, January 4, of typhoid fever.

William Whipple Leavitt, Pittsfield, Mass.; Medical Department of Columbia College, New York, 1860; member of the Massachusetts Medical Society; Civil War veteran; aged 87; died, Dec. 24, 1924, at the House of Mercy.

Thomas S. Florance, Marshfield, Mo.; Missouri Medical College, St. Louis, 1877; member of the Missouri State Medical Association; aged 71; died, January 1, at St. John's Hospital, Springfield, following an appendectomy.

Warren H. Rand, Charlotte, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1877; member of the Michigan State Medical Society; aged 71; died, Dec. 26, 1924, at Los Angeles, of pneumonia.

William W. Trinkle, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1888; member of the Medical Society of the State of Pennsylvania; aged 68; died, Dec. 26, 1924, of heart disease.

Chelsea Carroll Pratt ● Mankato, Minn.; University of Minnesota Medical School, Minneapolis, 1906; member of the Minnesota Pathological Society; aged 47; died, Dec. 20, 1924, of carcinoma of the esophagus.

Newburn Turner McArthur ● Napa, Calif.; Cooper Medical College, San Francisco, 1912; aged 42; died, Dec. 31, 1924, at the Franklin Hospital, San Francisco, of bronchopneumonia and acute nephritis.

William Gwillym Jones, Tamaqua, Pa.; Jefferson Medical College of Philadelphia, 1911; member of the Medical Society of the State of Pennsylvania; aged 46; died, January 3, of injuries received in a fall.

Benderant Hughes, Keytesville, Mo.; Missouri Medical College, St. Louis, 1890; member of the Missouri State Medical Association; aged 57; died, Dec. 20, 1924, of chronic nephritis and heart disease.

William Edward Dickon ● Monrovia, Calif.; St. Louis College of Physicians and Surgeons, 1901; member of the Oklahoma State Medical Association; aged 52; died, Dec. 29, 1924, of asthma.

Joseph Pantaleon Polletier, London, England; Laval University Faculty of Medicine, Quebec, Que., Canada, 1887; formerly a practitioner in Quebec; aged 64; died suddenly, recently in Quebec.

Morris Harold Frantz, New York; New York Homeopathic Medical College and Flower Hospital, 1915; member of the New York Neurological Society; aged 33; died, January 6, of pneumonia.

William Perry Foreman, Bagdad, Ky.; Louisville Medical College, 1897; member of the Kentucky State Medical Association; aged 51; was found dead in bed, Dec. 25, 1924, of heart disease.

Charles A. Post, Okmulgee, Okla.; University of South Medical Department, Sewanee, Tenn., 1895; aged 50; died, suddenly, Dec. 22, 1924, at Sulphur Springs, Ark., of cerebral hemorrhage.

John J. Rodman, Owensboro, Ky.; University of Louisville School of Medicine, 1878; member of the Kentucky State Medical Association; aged 75; died, January 4, following a long illness.

Sanford Blanding Whiting, Portland, Ore.; Pulte Medical College, Cincinnati, 1892; member of the Oregon State Medical Society; aged 56; died suddenly, Dec. 23, 1924, of heart disease.

Wilford Lewis Odell, North Collins, N. Y.; University of Buffalo Department of Medicine, 1898; member of the Medical Society of the State of New York; aged 49; died, Dec. 20, 1924.

Martha E. Hutchings Griffith, Crawfordsville, Ind.; Woman's Medical College of Pennsylvania, Philadelphia, 1870; aged 82; died, Dec. 29, 1924, of injuries received in a fall.

Dwight Williams Hunter ● New York; Medical Department of Columbia College, New York, 1879; member of the American Ophthalmological Society; aged 71; died, Dec. 22, 1924.

Charles W. Hardin, Waterloo, Iowa; University of Louisville (Ky.) School of Medicine, 1880; aged 65; died in December, 1924, at St. Francis Hospital, of diabetes mellitus.

Melville Augustus Beach ● Stratford, Iowa; State University of Iowa College of Medicine, Iowa City, 1901; aged 56; died, Dec. 31, 1924, at a hospital in Webster City, of uremia.

John William Hendrix, Safford, Tenn. (licensed, Tennessee, 1889); member of the Tennessee State Medical Association; aged 76; died, Dec. 20, 1924, of cerebral hemorrhage.

John Albert Nice, Mount Airy, Md.; University of Maryland School of Medicine, Baltimore, 1905; aged 45; died, Dec. 25, 1924, at his home in Ridgeville, of heart disease.

Edwin H. Gray, San Antonio, Texas; Memphis (Tenn.) Hospital Medical College, 1888; member of the State Medical Association of Texas; aged 61; died, Dec. 25, 1924.

Cyrus Wesley ● Fort Dodge, Kan.; University of Louisville (Ky.) School of Medicine, 1888; aged 61; died, in December, 1924, at Miami, Fla., of chronic nephritis.

Charles Evan Paxon, Hannibal, Mo.; Hahnemann Medical College and Hospital of Philadelphia, 1899; aged 51; died, Dec. 28, 1924, at St. Luke's Hospital, St. Louis.

William Henry Poole, Ocala, Fla.; Detroit Medical College, 1880; formerly a practitioner in Michigan; aged 66; died in December, 1924, of cardiorenal disease.

Lucian A. Bantes, Redding, Cal.; California Eclectic Medical College, Los Angeles, 1899; aged 70; died recently, of concussion of the brain, the result of a fall.

James Terrell Redd, Churchland, Va.; Medical College of Virginia, Richmond, 1895; member of the Medical Society of Virginia; aged 61; died in December, 1924.

Robert W. Timberlake, Hinton, W. Va.; University of Louisville (Ky.) School of Medicine, 1890; aged 56; died in December, 1924, of a self-inflicted wound.

Philip Lowenthal ● New York; Medical Department of the University of the City of New York, 1895; aged 51; died, Dec. 30, 1924, following an appendectomy.

Abraham Kevork Yeoumf ● Worcester, Mass.; Baltimore Medical College, 1895; served during the World War; aged 58; died, Dec. 26, 1924, of heart disease.

Frank Herbert Taylor, Ohiopyle, Pa.; Jefferson Medical College of Philadelphia, 1897; formerly county coroner; aged 57; died, Dec. 30, 1924, of pneumonia.

Henry A. Argue ● Corning, N. Y.; Medical Department of the University of the City of New York, 1881; aged 63; died, Dec. 25, 1924, of arteriosclerosis.

James Verree Ingham, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1866; aged 81; died, Dec. 29, 1924, of heart disease.

Edward L. Peter ● Flora, Ind.; Medical College of Indiana, Indianapolis, 1889; aged 63; died, Dec. 31, 1924, at the Eastman Hospital, Indianapolis.

Horace Sheldon Stokes, New York; Columbia University College of Physicians and Surgeons, 1892; aged 58; died, Dec. 19, 1924, of typhoid fever.

William Musser Capp, Devon, Pa.; Jefferson Medical College of Philadelphia, 1885; aged 82; died, Dec. 25, 1924, as a result of a fractured hip.

Thomas Michael Buckley ● Chicago; Long Island College Hospital, Brooklyn, 1891; aged 72; died suddenly, Dec. 29, 1924, of heart disease.

Norton H. Bailey, Morenci, Mich.; Pulte Medical College, Cincinnati, 1879; aged 67; died, Dec. 31, 1924, at Coldwater, following a long illness.

Per J. Oyen, Fessenden, N. D.; Medico-Chirurgical College of Philadelphia, 1894; aged 54; died suddenly, in December, 1924, of heart disease.

Aaron Leon Shepherd, Etiwanda, Calif.; Pulte Medical College, Cincinnati, 1878; aged 73; died, Dec. 31, 1924, of chronic myocarditis.

Thaddeus C. Frazier, Coffeyville, Kan. (licensed, Kansas, 1901); Confederate veteran; aged 83; died, January 2, at a hospital in Halstead.

T. J. Van Hoy, Dodd City, Texas (years of practice); Civil War veteran; aged 85; died, January 2, of a fractured limb, received in a fall.

Johannes Jacob Lewin, Port Chester, N. Y.; University of Jena, Germany, 1881; aged 68; died, Dec. 30, 1924; of arteriosclerosis.

L. R. McCarty, Centerville, Ark.; Vanderbilt University Medical Department, Nashville, Tenn., 1888; aged 58; died, Dec. 17, 1924.

Joseph William Case, Batesville, Ark.; Jefferson Medical College of Philadelphia, 1877; aged 70; died, Dec. 26, 1924, at Newport.

Don Palin Claypool, Salt Lick, Ky.; University of Louisville School of Medicine, 1915; aged 36; died, Dec. 29, 1924, at Louisville.

Alexander Gray ● Savanna, Ill.; Rush Medical College, Chicago, 1899; aged 56; died suddenly, Dec. 29, 1924, of heart disease.

James P. Julian, Wilkinson, Ind.; Physio-Medical College of Indiana, Indianapolis, 1881; aged 69; died, Dec. 28, 1924.

Silas L. Brooking, Kansas City, Mo.; Jefferson Medical College of Philadelphia, 1868; aged 76; died, Dec. 21, 1924.

Finley R. McGrew, Carnegie, Pa.; College of Physicians and Surgeons, Baltimore, 1880; aged 68; died, January 1.

James J. Mills ● Baltimore; Baltimore Medical College, 1889; aged 62; died suddenly, January 2, of heart disease.

Winfield S. Bookwalter, Miamisburg, Ohio; Miami Medical College, Cincinnati, 1872; aged 75; died, Dec. 24, 1924.

J. H. Herrington, Franklin, Ky.; University of Louisville School of Medicine, 1869; aged 82; died, January 2.

John Herbert Wilson ● Cambridge, Me.; Baltimore Medical College, 1890; aged 60; died, Dec. 29, 1924.

Jacob H. Harter, Indianapolis (years of practice); Civil War veteran; aged 84; died, January 3.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

BETO

Epsom Salt Sold as a Cure for Diabetes

Much of the fraud and misrepresentation that seems to be inseparable from the "patent medicine" business would be eliminated if the federal Food and Drugs Act was slightly amended. The law should require that the name and quantity of every drug in a "patent medicine," for which therapeutic claims are made, be declared by name and quantity on the label. Mystery is the greatest asset of the quack, and the mystery element of a "patent medicine" is due almost entirely to the secrecy that surrounds its composition. As THE JOURNAL has said with monotonous iteration: When the public prescribes for itself it has the right to know what it is prescribing, and there is no excuse either in business morals or in the interest of the public health for permitting venders of home remedies to hide behind the smoke screen of mystery and secrecy in exploiting their products.

"Beto" is advertised as a "Blessing to Diabetics." It was put on the market originally by one John Baring of Chicago. Baring died in September, 1924, but the nostrum is still

exploited, and letters that go out are still signed "John Baring." Like most nostrums sold for the alleged cure of diabetes, Beto is featured as a product whose use makes it unnecessary for the diabetic to diet; as the advertisements say: "Absolutely no dieting." The prospective purchaser is told that if he takes Beto he can eat just as he has been accustomed to. When first put on the market, Beto was sold and advertised exclusively as a cure for diabetes. Today it is recommended, in addition, for high blood pressure, "all kidney troubles" and dropsy.

The selling story for Beto is typical of "patent medicine" exploitation. Baring claimed that he suffered from diabetes for eighteen years and medical science gave him no help, but that he became weakened, emaciated and threatened with gangrene. Then, said Baring:

> "I made a lucky discovery in the shape of a medical preparation with which I had been experimenting for a long time and found that I had discovered the only successful method of eliminating diabetes."

Because of the number of inquiries received regarding this product and the dangerous possibilities in its sale, it was decided to analyze Beto and give the medical profession and the public the facts regarding it. One package of Beto sells for $5. A package was purchased and turned over to the A. M. A. Chemical Laboratory for analysis, and the Laboratory reported as follows:

LABORATORY REPORT

"One original box of 'Beto' (John Baring, 736 Lotus St., Chicago) was submitted to the A. M. A. Chemical Laboratory for examination. The box contained 100 large white tablets, having an average weight of 7.3 grams (approximately ¼ oz.) each. The powdered material possessed an odor resembling oil of cinnamon. Qualitative tests indicated the presence of talc, magnesium, a trace of sodium and sulphate. Alkaloids, sugars, emodin-bearing drugs, and vegetable drugs or extracts were not found. On heating the product in an oven at 160 C. for two hours, it lost 40 per cent. in weight,

and at 225 to 250 C. it lost 48 per cent. in weight. This is characteristic of magnesium sulphate hydrated (Epsom salt). Quantitative determinations were as follows:

"Acid-insoluble material (talc)	3.8
"Magnesium (Mg^{++})	9.7
"Sulphate (SO_4^{--})	39.1
"Water of crystallization (by difference)	48.4
	100.0

"The product, therefore, may be considered to have essentially the following composition:

"Talc	3 per cent.
"Magnesium sulphate, U. S. P. (Epsom salt)	97 per cent.
"Oil of cinnamon	trace

"Each tablet is equivalent to approximately 7 grams of Epsom salt, or one-half the dose for magnesium sulphate as given in the U. S. Pharmacopeia."

It will thus be seen that the purchaser of a five dollar package of Beto gets 1½ pounds of Epsom salt for his money. A good grade of medicinal Epsom salt can be bought at retail for less than 15 cents a pound. Here we have a good example of the point brought out in the opening paragraph of this article. Did the law abolish secrecy of composition in the sale of home remedies, how many people could Baring persuade to pay $5 for 25 cents worth of Epsom salt? More important still, had the public known that Beto is nothing more mysterious than Epsom salt, how many diabetics would have ever purchased the stuff in the belief that they were going to be cured by this preposterous piece of quackery?

When THE JOURNAL occasionally emphasizes the discrepancy between the selling price of a nostrum and the price of the ingredients of that nostrum, the "patent medicine" interests retort that such comparisons are unfair. In the case of meritorious merchandise, it is perfectly true that it is unfair to compare the selling price of such merchandise with the cost of raw materials. In the case of nostrums, however, this does not hold. The "patent medicine" people themselves have admitted that one-half of their receipts go for newspaper advertising alone—to say nothing of the vast sums spent on "almanacs," window displays, circulars and other publicity features. From the same source—the nostrum exploiters—has come the admission that at least three out of every four who purchase "patent medicines" are hypochondriacs who merely *think* that they are suffering from the ailments the nostrums are supposed to cure. When John Doe pays a dollar for a bottle of Dr. Quack's Panacea he little realizes that from fifty cents to seventy-five cents of the dollar has been expended in an effort to convince him that he suffers from the conditions for which Dr. Quack's Panacea is recommended. With such an enormous overhead—one that no legitimate business could maintain—no wonder Dr. Quack finds it necessary to charge a dollar for that which costs him less than five cents. When a concern, as in the present instance, sells as a cure for diabetes a quarter's worth of Epsom salt for five dollars and markets this in such a way that the public has no idea as to what it is buying there is ample justification for directing attention to the difference between the cost of ingredients and the selling price.

Beto is not a cure for diabetes, and to sell Epsom salt under the claim that it is a cure, and with the deadly dangerous advice that when taking it it is unnecessary for the diabetic to diet, is an offense against business morals and a menace to the public health.

Debt of Science to Medicine.—Physics and chemistry are the fundamental sciences on which physiology and medicine rest, and throughout their history have been closely associated with medicine. Galileo Galilei (1564-1642), equally preeminent as astronomer and physicist, was a student of medicine when he watched the swing of the lamp in Pisa Cathedral, and so discovered the law of the pendulum. It was by his pulse that he timed the swing, and the first use which he made of his discovery was to construct an instrument to measure the frequency of its beats.—Garrod, A. E.: *Lancet* 2:843 (Oct. 25) 1924.

Correspondence

PHYSICAL STANDARDS FOR DRIVERS OF MOTOR VEHICLES

To the Editor:—In THE JOURNAL, Dec. 27, 1924, there was a report of the committee on physical standards for drivers of motor vehicles. In this report the committee lays stress on the standardization of physical requirements for licensees.

May I suggest that we be not too arbitrary in this matter, as it will work a great hardship on many physically handicapped who, despite the handicap, are nevertheless qualified to drive an automobile? Our experience with the disabled in war and in industry has shown us that, despite the great mutilating disabilities when amputation of one member and sometimes two members exists, the individual by special appliances is able to drive an automobile. Although we do not advise such a person to follow an occupation of this sort, it may be the means, on several occasions, of his holding down the job where before he could not.

It may be of interest to the general medical profession to know that several years ago at Epsom Downs in England a race was held in which the thirty contestants drove automobiles at not less than 30 miles an hour, each contestant having two amputations—two hands, two legs, or a hand and a leg. It might be of further interest to know that in England no extra premium for accident insurance is imposed on amputees who drive automobiles.

The whole thing boils down to this: The important factor is not so much in the physical condition of the individual as it is in his mental condition and his attitude to the general public weal.

I therefore hope that the members of the committee will urge wherever these examinations are advised that the standards be made elastic enough, within limits, to allow the physically handicapped of sound mind and good intention to resume their previous occupations.

HENRY H. KESSLER, M.D., Newark, N. J.
Assistant Medical Director,
New Jersey Rehabilitation Commission.

CHICAGO MUTUAL CASUALTY COMPANY—A WARNING

To the Editor:—Dec. 7, 1924, one J. B. Walsh wrote myself and several other physicians in Beatrice policies in the Chicago Mutual Casualty Company. I enclose an answer from the company to an inquiry I made as to why I had not received acknowledgment of my application. Walsh collected nine dollars from me and various amounts from others here. Apparently Walsh had a permit from the company with their seal attached authorizing him to collect money for them. I thought that perhaps through THE JOURNAL this fellow might be caught or stopped from doing further business.

JOHN I. McGIRR, M.D., Beatrice, Neb.

[NOTE.—The letter accompanying that of our correspondent was one that he had received from Mr. Thomas A. Murphy, an attorney of Chicago, and reads as follows: "Your letter of January 7 addressed to the Chicago Mutual Casualty Company was referred to me as former receiver for that company. J. B. Walsh is not and so far as I was able to learn while acting as receiver for the company, never had been authorized to do any business. He has been selling a number of these policies in the West, apparently making a specialty of the medical profession, and must have obtained a great deal of money fraudulently."

Mr. Murphy has informed THE JOURNAL that, in addition to J. B. Walsh, there is one C. E. Kelley who is also alleged

to be selling fraudulent policies in the defunct Chicago Mutual Casualty Company. Both Walsh and Kelley are, apparently, working westward, and it would be well for any physician who may be approached by either of these men immediately to get in touch with the local police.—ED.]

ROENTGEN-RAY BURNS

To the Editor:—I was so unfortunate as to receive a roentgen-ray burn some time ago for which I have been vainly seeking relief. There must be many physicians who have been similarly unfortunate. Possibly something of benefit to all might result from a collective study of the experience of many cases, and I should be very glad indeed if any who share my opinion will communicate with me. If a sufficient number will do so, I shall tabulate the results.

Some of the points that should be given especial consideration are (*a*) the size, location, type and duration of the wound, and (*b*) the result of treatment of whatever kind. From the available literature no information of special value can be gleaned, and I accordingly feel that a study as proposed might be worth while.

CHARLES E. SIMON, M.D., Baltimore.
Resident Lecturer in Medical Zoology,
Johns Hopkins University School of
Hygiene and Public Health.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DECAFFEINATED COFFEE

To the Editor:—Can you give me any information about a coffee called "Kaffee Hag"? The makers of this product claim to have taken out 95 per cent. of caffein. Several of my patients have asked me about this preparation, and I should like to be in a position to give an intelligent answer.

H. W. SMITH, M.D., Roodhouse, Ill.

ANSWER.—"Kaffee Hag" has not been examined in the Association's chemical laboratory.

J. P. Street, working in the chemical laboratory of the Connecticut Agricultural Experiment Station, found "Kaffee Hag" to contain 0.03 per cent. of caffein and 11.47 per cent. of caffetannic acid, which agreed with the claim that 95 per cent. of the caffein is removed (THE JOURNAL, June 24, 1916, p. 2116). A later examination made in the Connecticut Agricultural Experiment Station ("Food Products and Drugs," 1920, Bull. 227, p. 228) shows "Kaffee Hag" to contain a somewhat larger amount of caffein; namely, 0.12 per cent. of caffein by weight and 0.10 per cent. of caffein calculated from nitrogen in the caffein residue. A third and still more recent examination for caffein showed the presence of 0.09 per cent. caffein by weight and 0.05 per cent. calculated from nitrogen. The Connecticut Experiment Station reports (Bulletin 236, p. 235) that the data submitted by the manufacturers show a range over a considerable control period of from 0.03 to 0.08 per cent.; the range from the foregoing analyses is from 0.03 to 0.10 per cent. Assuming that the average coffee contains 1.25 per cent. caffein, the amount of caffein remaining in "Kaffee Hag" should be close to 0.06 per cent. to agree with the claim that 95 per cent. of the caffein is removed.

VISUAL ACUITY AND THE SNELLEN TEST

To the Editor:—I have recently accepted a position as examiner of applicants for employment, which requires that each applicant's eyes be examined. The New York State Compensation Commission, in estimating the claims that come before it for adjustment, uses the Snellen test for eye disability. This test is official and has frequently been upheld by the courts. Except for referring patients who needed glasses, I have never paid attention to this part of medical practice. Now a proper understanding of this test is necessary. Strange to say, the very men who, I expected, would give me this information are found wanting when I ask the reasons for the simple results obtained. I also notice that the insurance carriers have recently objected to the method as mathematically incorrect. In this, they were able to impress the court as to the reasonableness of their position, and a recent case was sent back for a retrial. The average eye specialist has not considered the matter except as a means to test acuity of vision. I am sure it is a matter of mathematics, but in the professional literature that is available to me I can find no help. How may I get better posted?

M.D., N. Y.

ANSWER.—In 1861, when Snellen proposed the system of notation of visual acuity now in use under his name, he did not mean that the notation indicated a fraction. To Snellen, 20/40 meant that a man could read at 20 feet only a letter that should have been read at 40 feet, and he wrote the notation as 20/XL. Unfortunately, ophthalmologists lost that point of view and came to accept the Snellen notation as a fraction, probably as a result of carelessness and a lack of proper understanding; and up to very recently, 20/40 has been taken to indicate one-half, or 50 per cent., vision. A committee of ophthalmologists, appointed by the Section on Ophthalmology of the American Medical Association, now at work on that very problem, has been able to prove mathematically as well as by experimental research that the value of a vision of 20/40 is far greater than a mere 50 per cent. The chairman of the committee is Dr. Nelson M. Black of Milwaukee, and the committee is to present its report on this matter at the coming session of the Association. Briefly, the committee has proved that the Snellen notation of 20/20, 20/40, etc., is perfectly correct as a means of notation of visual acuity and conditions under which tested, but the value of the visual acuity represented by the notations does not correspond to the fractions these notations indicate to the average mind.

ADMINISTRATION OF MORPHIN TO ADDICTS

To the Editor:—I have under my care a successful professional man who has been a victim of the opium habit for twenty-one or twenty-two years. He requires from one to four quarter-grain doses a day at interrupted intervals, but has periods of complete abstinence lasting from one to four months. Then he starts in again with the usual symptoms of addicts. He goes almost to complete exhaustion, and the only thing that seems to revive him is the administration of morphin. Am I violating the law by administering hypodermics of morphin to this patient?

——, M.D., Nebraska.

ANSWER.—A physician can dispense, prescribe or administer morphin only "to a patient" and "in the course of his professional practice." This, the United States Supreme Court has held, confines the immunity of a registered physician strictly within the bounds of his professional practice, and does not extend it to include distribution intended to cater to the appetite or satisfy the craving of one addicted to the use of the drug. A "prescription" issued for the purpose named protects neither the physician who issues it nor the dealer who knowingly accepts and fills it (*Webb v. U. S.*, 249 U. S. 96; 63 L. Ed. 497; 39 Sup. Ct. Rep. 217).

TREATMENT OF MAXILLARY SINUSITIS

To the Editor:—When and where did Canfield publish his surgical method for maxillary sinusitis, and what have been the results?

M. A., São Paulo, Brazil.

ANSWER.—The title of the paper in which Canfield described his method of operating in these cases was: The Application of Conservative and Radical Surgery to Chronic Nasal Accessory Disease. It was published in the *Transactions of the American Laryngological, Rhinological and Otological Society* **10**:287, 1904, and in the *Medical News* **85**:100, 1904. We are unable to find any data as to results in the available references. Dr. R. B. Canfield, Ann Arbor, Mich., the author, doubtless could supply this information.

IS EATING SNOW POISONOUS?

To the Editor:—In an article about the Greely Expedition appearing in the *American Legion Weekly*, Dec. 19, 1924, mention is made of men who sickened from eating snow. Is there any scientific basis for this old theory?

A. C. S., Santa Barbara, Calif.

ANSWER.—A careful search of the indexes to medical literature fails to reveal anything on this subject. However, Vilhjálmur Stefánsson, the Arctic explorer, in his book, the "Friendly Arctic," 1921, p. 191, says: "There is no difficulty in quenching thirst by eating snow once you have rid yourself of the curious superstition that snow eating is dangerous." Coming from this source, it might almost be taken to bear the stamp of scientific fact.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 3. Sec., Dr. Harry C. De Vighne, Juneau.
CALIFORNIA: Los Angeles, Feb. 9-12. Sec., Dr. C. B. Pinkham, 906 Forum Bldg., Sacramento.
KANSAS: Topeka, Feb. 10. Sec., Dr. Albert S. Ross, Sabetha.
NEW YORK: Albany, Buffalo, New York, Syracuse, Jan. 26-29. Chief, Mr. Herbert J. Hamilton, State Education Bldg., Albany.
PENNSYLVANIA: Philadelphia, Jan. 27-31. Pres., Dr. I. D. Metzger, 322 Aiken Ave., Pittsburgh.
PORTO RICO: San Juan, March 3. Sec., D. Biascoechea, Box 804, San Juan.
VERMONT: Burlington, Feb. 10. Sec., Dr. W. Scott Nay, Underhill.
WYOMING: Cheyenne, Feb. 9-11. Sec., Dr. J. D. Shingle, Cheyenne.

Colorado July Examination

Dr. David A. Strickler, secretary, Colorado Board of Medical Examiners, reports the written examination held at Denver, July 1, 1924. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 37 candidates who took the physicians' and surgeons' examination, 27, including 4 osteopaths, passed and 10, including 3 osteopaths, failed. Eleven candidates were licensed by reciprocity, and 1 candidate was licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Colorado	(1924, 17) 75.1, 75.2, 77.6, 79.4, 82.2, 83, 83.7, 83.8, 84.2, 84.4, 84.9, 85, 85.4, 86, 87.1, 87.4, 88		
Northwestern University		(1924)*	84.3
Rush Medical College		(1924)	90.8
Tulane University		(1924)	81.4
Kansas City University of Physicians and Surgeons		(1924, 2)	79.6, 85.6
University of Oregon		(1924)	82.4
Osteopaths		75.8, 76.3, 76.7,	83.3

College	FAILED	Year Grad.	Per Cent.
Chicago Medical School		(1924)	62.6
Kansas City University of Physicians and Surgeons		(1924, 2)	55.4, 68.4
St. Louis College of Phys. and Surgs.		(1922)	48.3, (1923, 2) 31.6, 54.3
University of Heidelberg, Germany		(1909)†	65
Osteopaths		35.7,	55.6, 67.5

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1899)	Missouri
University of Kansas		(1910), (1923)	Kansas
Barnes Medical College		(1906)	Washington
University of Missouri		(1905)	Missouri
John A. Creighton Medical College		(1910)	Nebraska
University of Nebraska		(1923)	Nebraska
Starling-Ohio Medical College		(1913)	Ohio
Medico-Chirurgical College of Philadelphia		(1897)	Penna.
Woman's Medical College of Pennsylvania		(1911)	Penna.
University College of Medicine, Richmond		(1913)	Virginia

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Queen's University Faculty of Medicine		(1910)	Canada

* This candidate has completed his medical course, and will receive his M.D. degree on completion of a year's internship in a hospital.
† Graduation not verified by A. M. A.

Arizona July Examination

Dr. W. O. Sweek, secretary, Arizona Board of Medical Examiners, reports the written examination held at Phoenix, July 2-3, 1924. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. One candidate was examined and passed. Six candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Tulane University		(1924)	88.9

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Yale University		(1900)	Connecticut
Tulane University		(1916)	New Mexico
John A. Creighton Medical College		(1917)	Nebraska
University of Nebraska		(1920)	Nebraska
Ohio State University College of Medicine		(1915)	Ohio
Memphis Hospital Medical College		(1908)	Louisiana

Book Notices

PRINCIPLES OF X RAY AND RADIUM DOSAGE. By Albert Bachem, Ph.D. Cloth. Price, $8. Pp. 274, with 67 illustrations. Chicago: Albert Bachem, 1923.

This book answers the demand that has existed for a practical treatise written in English and dealing with the principles of radiometry. All the fundamentals are explained and, building up on this foundation, the various methods of determining the dosages are discussed. The theoretical deductions derived from this are then applied to the practical necessities. A valuable chapter is that on the possible damage done by radiotherapy and how to mitigate these untoward influences. The diagrams are plain and instructive. While an extensive review of the details contained in this book is not feasible on account of the technical character, it may be truthfully said that this treatise will be a valuable help to any operator who wants to devote himself to radiotherapy.

UROLOGISCHE OPERATIONSLEHRE. Herausgegeben von Prof. Dr. Fritz Voelcker, und Dr. Erich Wossidlo. Second edition. Paper. Price, $8.30. Pp. 654, with 504 illustrations. Leipsic: Georg Thieme, 1924.

It is to be regretted that an English translation of this book, devoted entirely to the technic of urologic operations, has not appeared. In the first edition the chapter on prostatic operations was contributed by the late Dr. Hans Wossidlo; his place is taken by Voelcker in the present edition. Another change is due to the death of Professor Zuckerkandl. His chapter on ureteral operations in this edition is written by two of his former assistants, Rubritius and Paschkis, both of whom have accomplished their task in a praiseworthy manner. The book gives a detailed description of the most common operations in urology. In some of the chapters, operations and methods of treatment that are only of historical value are still included, without any reference to their having been generally discarded. Chapters of especial value are those of Kielleutner on methods of examination of the urethra; of Kümmel on kidney operations; of Rubritius and Paschkis on ureteral technic, and of Kneise on urologic operations in the female. It is unfortunate that the recent English and American urologic literature has not been consulted as freely as it should have been. This is especially true in reference to both diagnostic instruments and operative technic. The chapter on urethroscopy by Wossidlo contains much unnecessary material. In the chapter on bladder operations by Voelcker, one might expect to see reference to the use of radium in connection with the operative procedures for bladder malignancy. The description of the technic of nearly every urologic operation is taken up in a more detailed manner than is possible in the average textbook, and is supplemented by many colored illustrations.

THE ARAB AT HOME. By Paul W. Harrison, M.D. Cloth. Price, $3.50 net. Pp. 345, with illustrations. New York: Thomas Y. Crowell Company, 1924.

SUSQUEHANNA. By Frederic Brush. Boards. Price, $3. Pp. 140. Portland, Maine: The Mosher Press, 1924.

RANDOM RHYMES AND POEMS FOR HOME FOLKS. By Edwin A. Nash, M.D. Boards. Price, $1.25. Pp. 126, with illustrations. Chicago: Stearns Brothers & Company, 1924.

FOUR WAY LODGE. By Charles B. Reed, M.D. Boards. Price, $4. Pp. 238, with 10 illustrations. Chicago: Pascal Covici, 1924.

It is interesting to find physicians contributing extensively to belles-lettres and the arts. The holiday season particularly is likely to bring forth a series of unusual contributions. The four books here listed may be taken as constituting an especially fine output.

Dr. Harrison has spent the last thirteen years as a missionary in Arabia. He is one who is able to gain the confidence and sometimes the love of the people among whom he works, because of his practical care of their physical needs, as well as of his attempts to control their habits of thought. His fine sense of humor permits him to enjoy the weaknesses of his fellow men as much as to suffer at their inadequacies. His book, which is excellently illustrated, gives a thorough insight into the daily life of the Arab and into the Arabian habit of thought. The numerous anecdotes and examples

with which its pages are covered make it a most fascinating volume.

A few years ago, Dr. Charles Dana published a volume on the poems of the physician in which he listed medical men who have contributed notable poetry to the literature of all countries. Dr. Fred Brush, who, when not writing poetry, is medical director of the Burke Foundation in New York, devotes his muse primarily to the people of his native hills—the Alleghanies—and to the outdoor life, which is so attractive in that district. However, he is a thinker who sees below the surface of things. In some of his poems, as in one addressed to the mummy of a little girl in the metropolitan museum of art, he reaches into the depths. His humor in the description of a "Dutch Hill Picnic" and in "Staruca Dan' is typically American. The book is beautifully printed in a limited edition—a unique volume.

Dr. Edwin A. Nash of Peterson, Iowa, is heralded as the only physician in Iowa ever to publish a book of poems. Most of them have appeared in Iowa newspapers, and some in medical journals. He is not limited to any particular form of verse, and apparently has had a great deal of pleasure in expressing himself in rhythmic form. He has, no doubt, been called on frequently to commemorate notable occasions in his community, and this he has done cleverly, using both the sonnet form and the acrostic.

Dr. Charles Bert Reed is perhaps best known to medical readers as an author of books on obstetrics for nurses, and of essays on historical subjects; for example, the life of Albrecht von Haller. He is of an artistic and literary family; his sister, Myrtle Reed, was widely known as the author of "Lilac and Old Lace," and his brother Earl Reed for his book on the sand dunes and for his etchings of American scenes. In the present volume, Dr. Reed describes hunting and fishing experiences in the woods on the lower shore of Lake Superior. He tells with humor and sentiment experiences among the few Indians that still remain in the district, of the guides, and of the habits of the birds and wild animals. At the same time, he develops the scene and conveys the spirit of the outdoors attractively. The book is beautifully printed in a limited edition, and makes an enjoyable and beautiful gift volume.

DER COCAINISMUS. Ein Beitrag zur Geschichte und Psychopathologie der Rauschgifte. Von Dr. Ernst Joël, und Dr. F. Fränkel. Paper. Price, $1. Pp. 111. Berlin: Julius Springer, 1924.

The first two chapters of this work deal with the chemistry, the pharmacology and the history of the drug from the time of its discovery up to the present. The abuse of cocain leaves in its wake deleterious effects on the system. These may be divided into three stages: (1) euphorisches stadium; (2) rauch stadium, and (3) depression stadium. Although there is no well marked line of demarcation between these three stages, the effects of cocain are definite and pronounced, and characteristic of each stage. Among the physical symptoms we may note the contraction of the muscles of the face; these are tonic and clonic, leading up to choreic and often winding up in epileptiform contractions. Skin disturbances in the form of exanthems, "Kopspickelin," are often noticed. All these physical symptoms are well known to cocain users and are, as it were, their credentials of admission into the separate world in which they live. The mucous membranes of the nose and mouth show their well known changes at an early stage. When these physical changes come about, nervous and mental changes are seen to appear. It is well known that cocain users are suspicious and of an increased suggestibility. Illusions and hallucinations are common occurrences among them. Just as there is a slow sexual depression in morphin addicts, the libido borders on the stage of senility, and returns when the drug is abandoned. The authors devote one chapter to the use of morphin with cocain, pointing out its differences and similarities, and the reason for their combined use. The differential diagnosis of cocain intoxication is taken up in detail, after which the treatment of the acute and the chronic condition is discussed. There is a short chapter on the forensic responsibility of the addict while under the influence of the drug. They also point out that a susceptibility in place of a tolerance is established to cocain in dogs, and that they cannot give any physiologic reason for this. The bibliography is rather extensive, including mostly German and French references.

LA MATIÈRE VIVANTE. Organisations et différenciations origines de la vie colloïde et mitochondries. Par J. Kunstler, Professeur d'anatomie comparée et embryogénie à la Faculté des sciences de Bordeaux, et Fred Prévost, Agrégé des sciences naturelles. Paper. Price, 18 francs. Pp. 252, with 80 illustrations. Paris: Masson et Cie, 1924.

More than forty years ago, the senior author of this book began to publish his observations and opinions concerning the structure of protoplasm, or sarcode, as he prefers to call it. He concluded then that protoplasm is always an organized substance and possesses a definite fundamental structure, which may undergo change with the specialization of function. The basis of this structure he conceived to be the spherule, which he regarded as a living entity, capable of assimilation, growth and division, that is, an elementary organism. The present book is a restatement of these views, based in part on the earlier, in part on later, observations. The authors describe and figure not only spherules but also granuloids, fibrilloids and vacuoloids, these being regarded as modifications of the fundamental structure. They assert that "elementary life" is not the life of the cell, but that of the elementary units. The simplest organisms, e. g., micrococci, represent such elementary units; that is, they are unispherular, but most organisms are plurispherular. Histology must become the study of these elementary units rather than of the cell. Numerous photomicrographs are reproduced, in most cases successfully. In addition to these the authors present schemata which they regard as representing the true structure of protoplasm; but in such matters assertion often seems to take the place of evidence. A considerable portion of the book is concerned with emphasizing the value of observation as contrasted with theory, and with polemics and claims of priority against observations and views of later investigators. Butschli's alveolar theory and Altmann's granule theory are severely criticized, and the later applications of colloid chemistry to the interpretation of protoplasmic structure fare no better. All these views are regarded either as based on incorrect observations or as incorrect interpretations of the observed structure. Many authors are accused of failure to recognize Kunstler's priority, and in these accusations personal resentment is sometimes permitted to appear to an extent that seems scarcely consistent with a strictly scientific attitude. In spite of their insistence on the value of observation as opposed to theory and their assertions that other theories are either incorrect or modifications of Kunstler's earlier views, the authors give us little beyond assertions in support of their own views. They appear not to recognize that, after all, it is not primarily a question of the accuracy of observation, but one of interpretation, that is, of theory, and that something more than assertion is necessary. Most of the experimental work of recent years bearing on the physical structure and chemical constitution of protoplasm is ignored. In short, the book belongs to the observational period in which differences of opinion concerning the data of observation, particularly in the field of microscopic investigation, led to violent disagreement and acrimonious discussion. At the present time the book appears as something of an anachronism.

HOW IS YOUR HEART? Intimate Talks on the Prevention of Heart Disease and on the Care of an Already Damaged Heart. By S. Calvin Smith, M.S., M.D. With an Introduction by Sir Thomas Horder, Bart., M.D., F.R.C.P. Cloth. Price, 5 shillings net. Pp. 204. New York: Cassell and Company, Ltd.

This volume, which is available both in American and English editions, will be found highly useful for the patient whom the physician wishes to instruct in proper personal hygiene and habits in a life which, by the nature of the ailment, must be special and limited. The style is direct and the use of anecdote and example carries home the points. Dr. Smith has sensed excellently the extent to which the average intelligent man may be acquainted with anatomic and medical facts. His book is certainly one of the most practical that have yet become available for the use of the patient with cardiac disease.

ABNORMAL PSYCHOLOGY AND EDUCATION. By Frank Watts, M.A. Introduction by Joseph Jastrow, Professor of Psychology, University of Wisconsin. Third edition. Cloth. Price, $2. Pp. 220. New York: D. Appleton & Company, 1924.

Written primarily for educators, this little book gives a strikingly clear and helpful view of modern conceptions of dynamic psychology, in language that will be intelligible to any educated person. In addition to some excellent discussions of the problems of group teaching and the management of crowds, Mr. Watts has made a careful study and review of the developments of modern psychopathology as it bears on the formation of character and personality. The views of Charcot, Janet, Freud, Jung, Rivers and McDougall are outlined briefly and with singularly clear insight and freedom from bias. The book can be recommended not only to teachers but also to physicians who desire to study their patients as human beings with purposes and longings, to social workers and to nurses. In spite of the wide range of the subject covered, there is no confusion; the material has been so well selected and is presented with such simplicity of expression that the reader cannot fail to follow the argument.

DAS WESEN DER HEILKUNDE. Historisch-Genetische Einführung in die Medizin für Studierende und Aerzte. Von Dr. Georg Honigmann, Ausserordentlichem Professor in Giessen. Price, $1.90. Paper. Pp. 319. Leipsic: Felix Meiner, 1924.

A volume of great interest to the physician who cares for the cultural aspects of medicine is this contribution on the history and philosophy of medicine. The author considers the development of the science from Greek medicine through the period of speculation and philosophy to the time of Virchow's cellular pathology and the clinical study of disease. He then considers the development separately of theories of knowledge, anatomy and physiology, pathology, diagnosis and therapy. He traces the growth of medical treatment from mysticism and magnetism through empiricism to modern experimental pharmacology. The final section deals with the work of the physician as an art and with the relation of the physician to the community.

LES SYNDROMES ENDOCRINIENS. Par le Dr. R. Porak, Professeur à l'Ecole de médecine de Chang-Hai. Préface du Professeur H. Roger. Paper. Price, 20 francs. Pp. 401, with 23 illustrations. Paris: Gaston Doin, 1924.

The author of this monograph takes up the disease symptoms or syndromes (including diagnosis and treatment) of the main organ systems of the body to show in what way endocrine disturbances contribute to these symptoms. Thus, there are chapters on the pathology of development; pathology of the development of the skeleton; the endocrines in sex life; the endocrines in functional disorders of the heart and circulation; endocrine factors in disorders of the genito-urinary tract; endocrine factors in disorders of the skin and of nutrition; endocrine factors in the pathology of the blood, and in the pathology of digestion, and, finally, special chapters on the thyroids, parathyroids, the suprarenals, and their disorders. The author has a lucid style and is fairly critical in the treatment of controversial points. The main defect of the monograph is failure to take cognizance of recent important literature or important developments in special fields. For example, the author does not mention the newer work on the parathyroid glands, work that has enriched our knowledge and to a certain extent modified our conception and treatment of parathyroid tetany. Photographs of patients with definite endocrine symptoms are well selected. The references to the literature, both clinical and experimental, are meager.

PATHOGENIC MICROÖRGANISMS. A Practical Manual for Students, Physicians and Health Officers. By William Hallock Park, M.D., Professor of Bacteriology and Hygiene, University and Bellevue Hospital Medical College; Anna Wessels Williams, M.D., Assistant Director of the Bureau of Laboratories of the Department of Health, and Charles Krumwiede, M.D., Assistant Director of the Bureau of Laboratories. Eight edition. Cloth. Price, $6.50. Pp. 811, with 220 illustrations. Philadelphia: Lea & Febiger, 1924.

This standard textbook is now in its eighth edition. It is authoritative in that it follows closely the classifications adopted by the Society of American Bacteriologists, and it presents most of the newer additions to our knowledge of bacterial organisms. Special consideration has been given to problems of immunity and to recent additions to the subjects of scarlet fever, measles, typhus and tularemia. The book is a practical reference work for both the physician and the student.

LEHRBUCH DER NERVENKRANKHEITEN FÜR STUDIERENDE UND PRAKTISCHE ÄERZTE, IN 30 VORLESUNGEN. Von Robert Bing, Professor an der Universität Basel. Third edition. Paper. Pp. 709, with 184 illustrations. Berlin: Urban & Schwarzenberg, 1924.

The third edition of this well known textbook brings the work fully down to the present and includes the results of recent investigations, such as those in relation to the extrapyramidal system, so far as they may be considered well established. The author has adhered to the original purpose of presenting the subject of nervous diseases in a manner suitable for the student and the practitioner. The material has been soundly chosen, and therapy is given adequate consideration; the illustrations are good, the diagrams being especially instructive and simple. The arrangement in the form of lectures does not hamper the style, and the book can be recommended heartily as sound and reliable.

Medicolegal

Representations and Operation by Naturopath or "Beauty Doctor"

(Hall v. Steele (Calif.), 226 Pac. R. 854)

The Supreme Court of California, in affirming a judgment in favor of the plaintiff, says that this action was one to recover damages for injuries received as the result of the alleged negligence of the defendant in the performance of a surgical operation. The plaintiff alleged that the defendant held herself out to the general public as a surgeon and dermatologist, skilled in the art of such profession; that the plaintiff was a motion picture actress whose lower lip was too large; that she employed the defendant as such surgeon and dermatologist to perform the operation of removing a slight or small strip of the skin from the lower lip; and that through the negligence and unskilfulness of the defendant the plaintiff's face had been permanently disfigured.

From the averments of the complaint it indubitably appeared that the action was one sounding in tort, the gravamen of which was the alleged negligent and unskilful performance of a surgical operation; and that whatever was said therein as to the engagement of the defendant as a surgeon and dermatologist to perform the operation, and as to representations made by the defendant as to the probable effect of the operation on the plaintiff's features, were to be considered as mere matters of inducement to the main cause of action and not as averments of the breach of a contractual relation forming the basis of the present action. The principle is applicable to cases wherein the plaintiff is not suing for a breach of warranty made in connection with the contract of employment of the surgeon, but solely for the unskilfulness of the operation performed. In such cases, whatever representations the physician, surgeon or dermatologist may have made as an inducement to the performance of the operation are not essential to the plaintiff's alleged cause of action for negligence, the sole actionable issue being as to whether or not the operation was skilfully or unskilfully performed. In an ordinary action for malpractice, the physician or surgeon is not to be held as a warrantor of cures or of consequences other than those arising from a breach of his duty to perform the operation skilfully; and if, as the individual cases show, through no unskilfulness on the part of the surgeon, the plaintiff's broken arm was permanently impaired, or the patient's nervous system shattered, or if the patient fails to recover, or even if, as in this case, the facial expression of the plaintiff is altered to an extent amounting to a disfiguration, the plaintiff cannot recover in this form of action without being able to show that the specific operation which the surgeon was engaged to perform was negligently and unskilfully performed.

The interesting inquiry is suggested as to whether a mere naturopath or so-called "beauty doctor" is entitled as such to be placed in the same category or to claim the same immunity from liability as is applied by law to regular medical practitioners and surgeons whose mission it is to minister to those who are ill or injured or afflicted with diseases or physical injuries which medicine or surgery skilfully applied may cure; while a naturopath or "beauty doctor" does none of these, but merely assumes or undertakes to remove physical or facial deformities not due to disease or injury but existing as natural deficiencies or defects of form or countenance which for the comfort, convenience or vanity of the individual it is deemed desirable to have removed. But the question as to whether the practitioner undertaking to remedy by surgical operation such deformities or defects and who, while performing with skilfulness the proposed alteration, does not remove the particular defect, or, doing so, produces another and perhaps more objectionable deformity, can rely on the rule which protects the regular practitioner or surgeon from liability for the effect of an operation skilfully performed, did not arise in this case, in view of the state of the pleadings, which sounded in tort and counted on an alleged unskilful surgical operation. A different issue involving this very question would have been presented if the action had been one for the breach of warranty as to the result of the operation performed.

Liability of University and Its Physician for Negligent Treatment of Student

(Davie v. Board of Regents, University of California, et al. (Calif.), 227 Pac. R. 245; Davie v. Regents of University of California et al., 227 Pac. R. 247)

The District Court of Appeal of California, First District, Division 1, in affirming, in the first case, a judgment in favor of the defendants, rendered after a demurrer to the complaint was sustained, says that damages in the sum of $151,433.35 had been asked for personal injuries alleged to have resulted from the negligence of a physician in charge of an infirmary maintained by the defendant at the University of California. From the complaint, it conclusively appeared that the infirmary was conducted for the exclusive benefit of the students, for the sole purpose of safeguarding and protecting the health of the student body. This being so, it was in no sense an organization for profit, and the imposition of the small fee did not convert this governmental function into a proprietary one. Nor did the recital that the defendant conducted it separate and apart from its duties as a governing body have this effect, for this was a mere conclusion of the pleader, and it was negatived by other allegations of the complaint. The promotion of the welfare of the students in this respect must be held to be the exercise of a duty involving governmental functions in the highest degree. The policy of the law denies liability of a state or municipality for negligence of its servants and physicians because such an activity, being a governmental agency, to permit such liability would result in enormous public burdens. That the defendant had the power to establish and maintain the infirmary there can be no question. That the maintenance of the health of the students is an educational activity is indicated not only by certain decisions but also by the provision of the political code of the state that school trustees and county boards of education may provide for proper health supervision in the public schools. The condition of the pliantiff brought about through the alleged malpractice of the physician was one that could not be remedied by giving him damages at the expense of the institution in question. For such damages a claimant is left to his remedy against those through whose fault he was injured.

In the second case the same court says that the plaintiff instituted an action for damages against the regents of the University of California, a corporation, and the physician in charge of the infirmary maintained by it, as codefendants. Demurrers to the complaint were interposed by the defendants separately, and separate judgments were entered in their favor. In support of the judgment in favor of the physician, it was argued that as no cause of action was stated against his codefendant the regents of the University of California, by reason of the fact that such corporation was a state agency exercising governmental functions, no cause of action was stated against him as the servant and agent of the corporation for acts done while he was acting within the course of his employment; it being urged that of necessity the immunity of the principal must extend and cover the agent. There was no merit in that contention. The immunity does not extend to agents. The principle which protected the regents was inapplicable to him. Where wrongs are done to individuals by those who are the servants of the government those injured are not remediless, as such servants or employees may be sued the same as other persons for torts which they have committed. Furthermore, a complaint is not necessarily defective in which there is united with a defendant another against whom no liability is alleged; and the immunity of the regents did not of itself abate the action against the alleged culpable defendant, or bar a judgment against him if guilty; for, when the demurrer of the regents was sustained, any objection that might exist by reason of the misjoinder was removed. The complaint alleged a complete cause of action against the defendant physician, charging, among other things, that in negligently performing a tonsillotomy the plaintiff's jawbone was dislocated and the left side of the atlas vertebrae of his neck was fractured, crushed and dislocated. Wherefore, the judgment sustaining the physician's demurrer is reversed.

In both cases, hearing denied by the Supreme Court of California.

Evidence from Examinations Without Consent

(State v. Coleman (W. Va.), 123 S. E. R. 580)

The Supreme Court of Appeals of West Virginia says that in this case, wherein one inmate of a state penitentiary was charged with the murder of another inmate, the defense offered evidence tending to show that the defendant had been mentally deranged since childhood by reason of blows on the head from which fractures were alleged to have resulted. The theory of the defense was that the provocation caused by the insulting language of the man killed to a person of the defendant's feeble mental caliber should be considered by the jury in determining whether there was malice, deliberation and premeditation. Several days before the trial, the prosecuting attorney and several officers of the penitentiary took the defendant, handcuffed, without notice to his attorneys, and without his consent, to the office of a physician in the city. The physician made a roentgen-ray examination of the defendant's skull and at the trial testified that he found no definite evidence of any fracture of the skull—in rebuttal to the defendant's evidence. The defendant contended that such evidence was not proper for the reason that such examination, without his consent, violated his constitutional right not to be compelled to give evidence against himself. Ordinarily the result of a physical examination made without the consent of the accused is not admissible in evidence; but the court finds that the weight of authority in this country is to the effect that where the defense of insanity is made, evidence of the facts disclosed by a physical and mental examination of the accused by physicians either prior to or during the trial, with or without his consent, does not violate the constitutional privilege of the accused not to be a witness against himself. It is further held that neither does such examination violate the confidential relation of physician and patient. In view of these authorities, the court feels that this evidence was properly admitted.

Society Proceedings

COMING MEETINGS

American Association for the Study of Goiter, Bloomington, Ill., Jan. 29-30. Dr. J. D. Moschelle, Odd Fellows Bldg., Indianapolis, Secretary.

Middle Section of American Laryngological, Rhinological and Otological Society, Lafayette, Ind., Feb. 23. Dr. George F. Keiper, 14 North 6th Street, Lafayette, Ind., Chairman.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).
Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

168: 625-780 (Nov.) 1924

*Endocrinology from Point of View of Surgeon. G. W. Crile, Cleveland.—p. 625.
Exophthalmic Goiter. J. W. Hinton, New York.—p. 629.
*Idiopathic Epilepsy a Sensitization Disease. J. L. Miller, Chicago.—p. 635.
*Cardiac Effects of Atropin. R. D. Rudolf and F. M. R. Bulmer, Toronto.—p. 641.
*Myocardium in Noninfectious Myocardial Failure. B. J. Clawson, Minneapolis.—p. 648.
*Study of Four Thousand Cases of Aneurysm of Thoracic Aorta. L. J. Boyd, Ann Arbor, Mich.—p. 654.
Problems in Hypertension. S. Neuhof, New York.—p. 668.
Noncalculous Gallbladder. R. R. Moolten, New York.—p. 684.
*Phenoltetrachlorphthalein in Study of Liver Function. W. W. Boardman and G. D. Schoonmaker, San Francisco.—p. 688.
Treatment of Primary and Secondary Syphilis. B. A. Thomas, Philadelphia.—p. 697.
*Pathology of Tuberculosis in Infancy. F. H. Bartlett and M. Wollstein, New York.—p. 704.
*Comparison of Blood Platelet Count in Splenic Arterial and Venous Blood. J. K. Holloway and L. M. Blackford, Rochester, Minn.—p. 723.
*Two New Antimony Compounds for Intravenous Use. A. Randall, Philadelphia.—p. 728.
Experimental Biliary Drainage in Dog. A. Winkelstein and P. W. Aschner, New York.—p. 749.

Endocrinology; Surgical Bearing.—Evidence is presented by Crile in favor of the theory that thyroid secretion and epinephrin are essential elements in the operation of the electrochemical mechanism the human organism is conceived to be; and that in the operation of the electrochemical mechanism the thyroid and the suprarenals are indissolubly linked with the brain and the liver, their probable rôle being to control the oxidation within the brain whereby the electric charges which operate the mechanism are accumulated. The practical surgical bearing of these studies is that they point the way to an increased control of the factors which make or mar the surgical results.

Idiopathic Epilepsy a Sensitization Disease.—Recently Raulston and Miller reported on the treatment of migraine by intravenous injections of a 5 per cent. peptone solution. Evidence was presented to support the view that migraine might belong to the sensitization group of diseases. Since that time the treatment has been employed in a considerable number of additional cases, with results that support the views expressed at that time that such treatment has a distinct effect on the migraine seizures. Miller now calls attention to the possibility that idiopathic epilepsy may fall in this same group.

Cardiac Effects of Atropin.—Rudolf and Bulmer summarize their findings as follows: atropin has two distinct effects on the heart rate when this is regular. In small doses it merely slows it, probably by stimulation of the vagal centers. In large doses it hastens it by paralyzing the vagal endings in the heart. It also tends to remove any existing heart block. If the dose be neither large nor small, there will be no change in the heart rate, the two effects of stimulation of the vagal centers and partial paralysis of the nerve endings neutralizing each other. Individuals vary much in their reaction to atropin. In most adults 1/100 grain will merely slow the heart, in some no effect will occur, while in a few a slight hastening sets in. In the last two groups it is usually only necessary to lessen the dose to get the slowing effect.

Myocardium in Noninfectious Myocardial Failure.—The anatomic changes in the myocardium have been studied by Clawson in myocardial failure resulting from hyperpiesia, chronic glomerulonephritis, right ventricular hypertrophy, defective valves, syphilitic aortitis and adherent pericardium. One hundred and two hearts were available for study. There were no anatomic changes except coronary sclerosis and myocardial fibrosis. Coronary sclerosis of serious degree was present in 22.5 per cent. Myocardial fibrosis was found in a marked or moderate degree in 20.5 per cent. and in a slight degree in 30 per cent. There was usually a close correspondence between the situation and extent of myocardial fibrosis and the distribution and degree of the coronary sclerosis. Myocardial fibrosis is usually due to coronary disease, but occasionally rheumatic infections may give rise to a slight degree of fibrosis. Myocardial strain (hypertensive or nonhypertensive) is not a cause of myocardial fibrosis. Syphilitic myocarditis is rare. Myocardial failure is rarely due to anatomic changes in the myocardium. It may be explained as an exhaustion of the cardiac muscle. True chronic inflammation of the myocardium is very rare. What is commonly called "chronic myocarditis" is usually myocardial fatigue. Approximately half of the cases of myocardial failure show no anatomic changes in the heart muscle. The anatomic changes in the heart muscle are seldom sufficient in themselves to cause death.

Aneurysm of Thoracic Aorta.—Some of the points brought out by Boyd in his study are: thoracic aneurysm is not rare. It probably represents the cause of mortality in 0.1 to 0.5 per cent. of deaths in American cities. It is 5.6 times as common in males as in females. It may be seen at any age. The curve of incidence in males reaches a maximum in the thirty-six to forty-year period. The largest number of cases in females is found in the forty-six to fifty-year period. The colored race is notoriously liable to aneurysm, probably due to the increased incidence of syphilis in that race. A very great majority of the cases are due to infection, syphilis standing out beyond any other. The time interval between the infection and the production of the first symptoms of aneurysm in 200 cases was, on the average, twenty years. Prolonged hypertension plays a part in the production of arterial degeneration. Much more important in the production of aneurysm is sudden increased intravascular tension resulting from sudden violent physical exertion. The ratio of aneurysms in the various portions of the aorta is approximately 10-7-3-1. Pain was the first and chief complaint in 70 per cent. of recorded cases; dyspnea in 31 per cent.; cough in 19 per cent. Tumor is at times the chief complaint and may be one of the early symptoms, especially in arch tumors growing forward. As a rule, tumor is not an early symptom and in many cases it may be absent throughout the entire course of the disease. Dysphonia is a common symptom but is a chief complaint only one sixth as frequently as pain. Dysphagia is closely allied to dysphonia. Among the most important objective phenomena is pulsation. Tracheal tug is positive in much less than one half the cases because of the anatomic requirements for its production. The presence of dulness is of importance. About 52 per cent. of the patients die from rupture.

Liver Function Tests.—Boardman and Schoonmaker regard phenoltetrachlorphthalein as a valuable means of studying the functional activity of the liver. Their preference is for the duodenal-tube method whenever possible because of the objection on the part of the patient to the natural injection of large amounts of highly colored material intravenously and because of the danger of induration and thrombosis with these large injections which are necessary in the Rosenthal method. With the duodenal-tube method they recommend the adoption of the 50 mg. dose as the standard, because there is no apparent advantage in the large doses. Because of the impossibility of collecting all the bile excreted over a given period quantitative estimations by the duodenal-tube method are of no value. With 150 mg. of the dye an initial appearance time of eleven minutes or over, and a maximum appearance time of fourteen minutes or over, would seem to indicate liver disturbance. In normal cases the time between the initial and maximum appearance of the dye rarely exceeds three minutes.

Tuberculosis in Infancy.—Bartlett and Wollstein sum their views as follows: The seriousness of tuberculosis in infancy is evident. The only treatment for tuberculous infants is preventive; that means absolute isolation from any one who has tuberculosis. This obviously is best accomplished by the isolation of the tuberculous individual.

Blood Platelet Count of Splenic Blood.—In a series of controlled experiments performed on dogs for the purpose of determining the relative platelet content of the splenic artery and vein, Holloway and Blackford found that the blood platelet content of the splenic vein is not normally below that of the splenic artery. The blood platelet content of the venous circulation, in general, is apparently slightly elevated over that of the arterial.

New Antimony Compounds.—Two new synthetic antimony compounds for intravenous administration are presented by Randall: (1) sodium antimony thioglycollate and (2) triamide of antimony thioglycollic acid. Studies on animals show them to be of slightly lower toxicity than tartar emetic, while clinically they have failed to show any evidence of antimony poisoning so often observed in using tartar emetic. Clinically, they have evidenced no toxicity in the dosage advised (maximum, 0.1 gm.), while five patients intolerant to tartar emetic have taken these drugs without reactions. Neither of these two drugs have shown any irritative effect at the site of intravenous injections. Ten cases of granuloma inguinale are reported. Prompt, and complete healing, with evident cure, has been accomplished in nine. Immediate relief of pain following the initial injection has been a remarkable manifestation in three cases.

American Journal of Obstetrics and Gynecology, St. Louis

Ⓒ: 535-683 (Nov.) 1924

Milk Injections in Gynecology and Obstetrics. G. Gellhorn, St. Louis.—p. 535.
Certain Pathologic Conditions of Amnion. R. Paddock, St. Louis.—p. 546.
Chorio-Angiofibroma (Chorio-Angioma). R. S. Siddall, Detroit.—p. 554.
*Nephralgia with High Blood Pressure. D. B. Casler, Baltimore.—p. 569.
Function of Ovary. R. T. Frank, Denver.—p. 573.
Contraception. R. L. Dickinson, New York City.—p. 583.
*Acquired Atresia of Vagina and Cervix. F. A. Pemberton, Boston.—p. 605.
*Occiput Posterior: Case. H. C. Cowles, New York.—p. 616.
Enclosed Bed for Premature and Feeble Infants. H. J. W. Morgenthaler, Brooklyn.—p. 622.
Contractions of Pelvic Outlet Necessitating Delivery by Cesarean Section. E. L. Stone, New Haven, Conn.—p. 625.
Cautery Treatment of Chronic Cervicitis; Histologic Studies. B. Z. Cashman, Pittsburgh.—p. 628.
Double Uterus. C. V. Zwalenburg, T. A. Card and W. A. Jones, Riverside, Calif.—p. 634.
Hydatid Mole with Spontaneous Rupture of Uterus. I. B. Krellenstein, New York.—p. 636.
Independent Fibromyomata of Broad Ligament. H. C. Seaver, Los Angeles.—p. 639.
*Spontaneous Version. P. Findley, Omaha.—p. 646.

Nephralgia with High Blood Pressure.—Casler reports the case of a woman, aged 34, who was admitted to the hospital with acute renal colic. One of the most striking features of the case was the persistent high blood pressure, varying between 240/140 and 200/110. Every possible test was made to find some pathologic basis to explain her intense colic, but none was found. The pain during the attacks was constant in the left kidney region and did not tend to radiate. This pain was so severe that it did not yield to morphin in large doses and was controlled only with gas and chloroform. After several weeks she became suddenly blind, and was seized with intense nausea and violent left-sided renal colic. These symptoms rapidly became worse and at times during an attack of pain there would be a complete suppression of the urine, lasting as long as forty-eight or even sixty hours. The colic sometimes stopped as suddenly as it had begun and then there would be excessive voiding, as much as 1,500 c.c. being excreted in an hour. In the hope of relieving her it was decided to do a decapsulation. When exposed, the left kidney was found to be the typical large gray kidney of an early interstitial nephritis. The pelvis and ureter were normal. There were two aberrant veins entering the kidney and these were ligated. When a small nick was made in its capsule, the kidney was under such great tension that the capsule rapidly split open for its entire length and the kidney peeled out. Following the decapsulation the patient recovered quickly and was able to resume her duties in a very short time. One of the most striking results of the operation was the rapid fall in the blood pressure, the systolic pressure dropping to 150 and remaining at this point until recently, when it again rose, probably owing to her nephritis. Four years after the original operation the patient was again admitted with a return of the left-sided renal pain, and these attacks continuing, she was again explored and at the second operation the kidney capsule was found densely adherent and very much thickened, while the kidney itself had changed from the large, gray, soft type to the small, red, contracted or sclerotic kidney of interstitial nephritis. Secondary decapsulation brought about very little effect, the blood pressure dropping for a short time but the old pain returning about three weeks after the second operation.

Acquired Atresia of Vagina and Cervix.—Seventy-five cases of troublesome atresias, mostly partial, of the vagina or cervix or both, are analyzed by Pemberton. The premenopause atresias of the vagina are, therefore, inflammatory, postoperative, and traumatic in origin. The inflammatory ones occur at the middle third, the postoperative at the introitus and the traumatic at both. The actual etiology of the inflammatory cases is difficult to determine, but it seems probable that the original infection was gonorrhea in most cases, either a vulvovaginitis or a neglected infection later in life. One of the common and most troublesome diseases of the vagina after the menopause is senile vaginitis. Pemberton believes that it is generally realized that when plastic operations are done on the vagina at or near the menopause, allowance should be made for the atrophy which is going to occur normally at that time. If the introitus is made small it may shrink enough to cause dyspareunia later. This point applies also when plastic operations and a hysterectomy with removal of the ovaries are done at the same time.

Incidence of Occiput Posterior.—A series of 312 histories showing an original occiput posterior position is tabulated by Cowles. The R. O. P. position occurred 178 times and the L. O. P. 134 times. Anterior rotation occurred spontaneously in the R. O. P. group 116 times, in the L. O. P. group 81 times, leaving 35 per cent. and 40 per cent., respectively, persistently posterior; a combined incidence of 36.8 per cent. This figure is three and one half times larger than that usually given in textbooks for the persistent posterior position.

Spontaneous Version at Term.—Findley relates a case of a spontaneous version at full term. Originally it was a breech presentation, the occiput lying under the right costal arch. The mother was suffering severe pain in the region of the gallbladder. Two days after she was first seen the patient recited how in the preceding night the baby became unusually active, so much so that she was thoroughly alarmed. Then followed a forcible tightening of the uterus. The active fetal movements persisted for a minute or two and with the contraction of the uterus something slipped from under her ribs on the right side and she was instantly and permanently relieved from the pain which had persisted for several weeks. On palpation the head was felt at the brim of the pelvis. There had occurred a spontaneous change of poles from L. S. P. to L. O. P.

Annals of Medical History, New York

Ⓒ: 363-493 (Dec.) 1924

First Editions of Sir Thomas Browne. E. Moschcowitz.—p. 363.
Life and Work of Samuel Thomas Von Sömmerring. T. H. Bast.—p. 369.
William Maxwell Wood, First Surgeon General U. S. Navy. W. M. Kerr.—p. 387.
Biographic History of Diagnosis. W. S. Middleton.—p. 427.
Ceraunia or Thunder Axe; Use in Folk Medicine. M. A. Van Andel.—p. 452.
François Rabelais. I. H. Corist.—p. 457.
Smallpox and Inoculation. C. G. Cumston.—p. 465.
"Breviarie of Health" by Andrew Boorde. W. G. A. Robertson.—p. 471.
The Seguins of New York. C. L. Dana.—p. 475.

Annals of Surgery, Philadelphia

Ⓒ: 641-800 (Nov.) 1924

*Diagnostic Value and Interpretation of Cerebrospinal Determinations. T. Fay, Philadelphia.—p. 641.
*Mechanism of Postoperative Hemorrhage. C. O. Wilensky and S. S. Samuels, New York.—p. 652.
Fracture of Larynx: Three Cases. T. F. Mullen, Pocatello, Idaho.—p. 660.
*Traumatic Fat Necrosis of Female Breast: Differentiation from Carcinoma. B. J. Lee and F. E. Adair, New York.—p. 670.

Neurotic or Irritable Abdomen. L. Freeman, Denver.—p. 692.
Biliary Tract Surgery. J. H. Baldwin and W. R. Gilmour, Philadelphia.—p. 697.
Lymphosarcoma of Small Intestines: Two Cases. F. W. Rankin, Lexington, Ky.—p. 704.
Uretero-Pyelography. D. N. Eisendrath, Chicago.—p. 712.
Case of Congenital Perineal Testicle. S. G. Sonneland, Cleveland.—p. 716.
*Bone Regeneration Following Chronic Suppurative Osteitis of Distal Phalanx. P. C. Potter and M. H. Levine, New York.—p. 728.
Errors in Roentgen-Ray Diagnosis of Osteogenic Sarcoma. Two Cases. H. L. Beye, Iowa City.—p. 730.
*Sacral Nerve Block Anesthesia. W. R. Meeker, Rochester, Minn., and A. J. Scholl, Los Angeles.—p. 739.
Adolescent Coxa Vara. T. P. Noble, Rochester, Minn.—p. 773.
*Reconstruction Operation for Arthritis Deformans of Hip-Joints. R. Whitman, New York.—p. 779.

Value of Cerebrospinal Determinations.—Fay discusses spinal puncture and drainage, the chemical and cytologic findings of spinal fluids in various diseases, the Queckenstedt test, lipoidal injection, spinal anesthesia and cisternal and ventricular puncture. He is convinced that much of practical value may be obtained by spinal, cisternal and ventricular puncture; always undertaking these operations with the aid of a manometer, carefully noting pressure conditions as they exist and studying the fluid for its various pathologic conditions.

Mechanism of Postoperative Hemorrhage.—Two cases of postoperative hemorrhage were subjected to careful study by Wilensky and Samuels with reference to the cause of the hemorrhage. The evidence appears strong that infection is the most important single factor, if not the only factor, causing secondary hemorrhage in operative and other wounds. The studies herewith reported show that the presence of the drainage apparatus causes an apparently protective thickening of the wall of the vessel with which the drainage material is in close contact; that this thickening is due to a proliferation of connective-tissue cells in the intima; that the infective process with resultant cell necrosis begins in the intima and spreads to the media; that a rupture occurs in the intima and media with the formation of an aneurysmal sac; and that the bleeding follows as a result of the rupture of the aneurysm. It seems, then, that in cases of secondary hemorrhage the important causative factors include an initial trauma of some kind, plus pressure of the tube or other drainage apparatus in an infected environment.

Traumatic Fat Necrosis of Female Breast.—Twenty cases are analyzed by Lee and Adair. A severe trauma to the breast produces a rupture of fat cells, and at the same time a rupture of small blood vessels, with extravasation of blood into the tissues. Necrosis of the fat tissue appears soon after the injury, and giant cells have been found in the tumors at the end of five weeks. The youngest patient of the twenty reported on was 30, the oldest 63. In practically every incidence the patient was far beyond the normal weight. Nineteen of the twenty had definitely obese breasts. Traumatic fat necrosis of the breast is characterized by its painlessness. Hardness was present in fifteen of the twenty cases, and the stony hardness of fat necrosis is largely responsible for the difficulty of clinically distinguishing the lesion from carcinoma. Skin adherence was present in fourteen cases. Nipple retraction is rarely present, occurring in but four of the cases, or 20 per cent. In eighteen cases a statement was made as to the presence or absence of ecchymosis, and in nine instances, or 50 per cent., the findings were positive. Thirteen cases were diagnosed as being nonmalignant; seven were diagnosed as cancer. A nontraumatizing excision of the tumor, together with a reasonably wide zone of surrounding tissue, will yield a satisfactory result.

Bone Regeneration Following Sequestration.—Three cases reported by Potter and Levine show that the degree of bony regeneration following sequestration will vary directly with the amount of healthy bone and periosteum left in place; and that in cases in which spontaneous sequestration is allowed to take place, with resulting preservation of periosteum, a well functioning, sightly phalanx may be expected.

Sacral Nerve Block Anesthesia.—Meeker and Scholl assert that anesthesia of the sacral nerves is entirely satisfactory for most operations that are to be carried out in the field supplied by the sacral nerves. It entails practically no immediate or late risk for the patient, and has proved very efficient and satisfactory.

Reconstruction of Hip Joint.—In cases of complete loss of the neck of the femur after fracture of the neck Whitman saws off the trochanter at an obtuse angle and attaches it to the outer side of the shaft below the angle of excision by means of a suture or screw. Thus a new, correctly angled, neck is made.

California and Western Medicine, San Francisco

22: 595-654 (Dec.) 1924

Diagnosis and Treatment of Gastric and Duodenal Ulcer. W. F. Cheney, San Francisco.—p. 595.
Optimum Temperature of Operating-Rooms. E. Rixford, San Francisco.—p. 599.
*Carbuncle of Kidney. C. P. Mathe, San Francisco.—p. 601.
*Progression Reflex. J. L. Meyers, Los Angeles.—p. 609.
Cancer of Rectum. M. S. Woolfe, San Francisco.—p. 613.
Survey of Nontubercular Chest Lesions. H. Snure, Los Angeles.—p. 616.
De-Etherization by Carbon Dioxid Inhalation. E. B. Christiansen, San Francisco.—p. 617.
*Study of Empyema in Children Under 13 Years. A. J. Scott, Jr., Los Angeles.—p. 619.
*Treatment of Postinfluenzal Asthmatic Bronchitis. S. H. Hurwitz, San Francisco.—p. 620.
Surgery of Antrum of Highmore. C. F. Welty, San Francisco.—p. 624.
Epithelioma of Lip Treated with Radium. D. W. Montgomery and G. D. Culver, San Francisco.—p. 628.

Carbuncle of Kidney.—Mathe reviews twenty-one cases of carbuncle of the kidney now recorded in the literature and reports one new case in which the primary focus was in two boils under the right inferior maxilla. *Staphylococcus aureus* was demonstrated in the blood prior to operation and in the kidney after nephrectomy.

Progression Reflex.—Observations are recorded by Meyers dealing with the reflex flexion of the limb on passive flexion of the toes, a reflex which was described by Marie and Foix, in 1910. The reflex is not seen in normal people, and is indicative of a lesion of the pyramidal tracts. The reflex, Meyers found, is abolished or markedly diminished by a posture of flexion in the lower limb. The reflex may be present in the absence of a Babinski toe sign, or of a reflex of defense. It is seen with especial frequency when the lesion of the pyramidal tracts is irritative rather than destructive. Interpreted physiologically, the reflex appears to represent the flexion phase of reflex stepping in the "spinal" animal, or the progression reflex, which, according to the author, includes the Babinski toe response in man.

Pneumococcus Empyema.—Among the twenty-six cases analyzed by Scott the pneumococcus was present in the cultures of all the fatal cases, either alone or in a mixed infection, excluding one case of tuberculosis.

Serum Therapy of Postinfluenzal Bronchitis.—Postinfluenzal bronchitis, with or without symptoms of bronchospasm, is a frequent sequel of epidemic influenza. Hurwitz believes the condition to result from secondary infection of a congested and edematous bronchial mucous membrane with a streptococcal flora containing, in the main, four types of these organisms. Vaccination of such patients, over a shorter or longer period, with carefully prepared and properly administered autogenous vaccines containing these organisms have given Hurwitz results when all other methods of treatment have failed. A successful therapeutic result would seem to depend not so much on the age of the patient and the duration of symptoms as on the absence of irreparable damage in the lungs and bronchi.

Colorado Medicine, Denver

21: 360-410 (Dec.) 1924

Problems in Care of Insane. H. A. Lamoure, Pueblo.—p. 361.
Osgood—Schlatter's Disease; Case. C. H. Heacock, Pueblo.—p. 365.
Organ Susceptibility to Tuberculosis; Route of Pulmonary Infection. H. J. Corper, Denver.—p. 369.
*Laboratory Diagnosis of Gonorrheal Infections. H. Gauss, Denver.—p. 374.

Diagnosis of Gonorrheal Infections.—Four methods are available for the identification of the gonococcus: (*a*) the examination of the stained smear; (*b*) the cultural characteristics of the growth; (*c*) the immunologic reactions and (*d*)

the biochemical reactions. Of these, Gauss says, the first three afford only a basis for a presumptive diagnosis, while the biochemical reactions form the only absolute basis so far known for differentiating the gonococcus from the other gram-negative cocci that resemble it; and these reactions should be performed in all cases of medicolegal importance. *Micrococcus catarrhalis* does not ferment any of the known sugars; the gonococcus ferments dextrose only while the meningococcus ferments dextrose and maltose.

Illinois Medical Journal, Oak Park

38: 1-52 (Dec.) 1924

*Value of Iodin in Exophthalmic Goiter. H. S. Plummer and W. M. Boothby, Rochester, Minn.—p. 401.
Mental Disease in Illinois. C. F. Read, Chicago.—p. 407.
Coincidence in Surgery. L. Freeman, Denver.—p. 410.
Preparation of Prostatics for Operation. D. N. Eisendrath, Chicago.—p. 414.
Relation of Respiration and Circulation. G. C. Robinson, Nashville, Tenn.—p. 416.
Secretary's Job. R. R. Ferguson, Chicago.—p. 421.
Achievements of Medical Science. W. F. Grinstead, Cairo, Ill.—p. 424.
Health Conference at Urbana. L. K. Sadler, Chicago.—p. 428.
Etiologic Treatment of Strabismus. W. E. Boynton, Chicago.—p. 430.
Case of Ovarian Fibroid with Thrice-Twisted Pedicle. M. Thorek, Chicago.—p. 432.
Some Biologic and Social Dangers Associated with Preventive Medicine. E. M. Stanton, Schenectady, N. Y.—p. 437.
Intravenous Medication Simplified. L. E. Barnes, Chicago.—p. 443.
Pregnancy with Complications. D. H. Bessesen, Minneapolis.—p. 444.
*Untoward Effects of Quinidin. J. G. Carr, Chicago, and W. H. Speeneman, St. Louis.—p. 445.

Iodin in Exophthalmic Goiter.—Plummer and Boothby detail the results obtained from the use of iodin in exophthalmic goiter. They give the course of the basal metabolic rate, pulse rate and the weight of patients before and after the administration of Lugol's solution. Liquor iodi compositus, or Lugol's solution, was used as the iodin preparation, because it is an aqueous solution of iodin (5 per cent.) and potassium iodid (10 per cent.), and therefore provides a large amount of iodin loosely combined with potassium. It has been found that 10 drops of Lugol's solution, well diluted with water, and followed by half a glass of water is, on the average, the optimal dose. Certain patients have been observed who did not react to 5 drops but did react when 10 drops were given three times a day. Some of the most rapid reactions have occurred with 10 drops. At the present time the routine dose in the average moderately severe case is 10 drops daily; if there is a critical gastro-intestinal or mental crisis, this amount is given three or four times a day. If the drug is not tolerated by mouth, it is given in similar doses by rectum; rectal administration, however, has only been found necessary for a few days, for patients who had severe gastro-intestinal crisis, and constant nausea and vomiting. As soon as the vomiting was controlled, the solution was given by mouth.

Untoward Effects of Quinidin.—Carr and Speeneman review the records of eighty-three patients who have received quinidin for some form of cardiac irregularity. Of these, seventy-seven had auricular fibrillation, five had premature contractions, either auricular or ventricular, and one had a paroxysmal tachycardia. They did not give the drug to patients with mental disturbances. The series consisted of patients with long established heart disease. In twenty-seven of the eighty-three patients one or more untoward manifestations developed. These were: (1) mild toxic symptoms; (2) a rise in the ventricular rate; (3) embolism; (4) abnormalities of cardiac rhythm, and (5) sudden collapse.

Journal of Immunology, Baltimore

10: 451-607 (Nov.) 1924

Gradual Decrease of Active Immunizing Value of Toxin-Antitoxin Mixtures. E. J. Banzhaf, New York.—p. 451.
Preparation of Oil and Toxin-Antitoxin. E. J. Banzhaf, New York.—p. 459.
Toxicity of Human Blood Plasma in Various Diseases. IV. S. A. Levinson.—p. 463.
Titration of Diphtheria Toxin and Antitoxin by Ramon's Method. S. Bayne-Jones, New York.—p. 481.
Cross Protective Power of Antipneumococcus Monovalent Serums and So-Called "Antibody Solution." B. S. Kolchin and L. Gross, New York.—p. 505.
*Production of Precipitins for Ragweed Pollen. J. T. Parker, New York.—p. 515.
*Specific Hypersensitiveness. XI. Familial Occurrence of Hay-Fever and Bronchial Asthma. W. C. Spain and R. A. Cooke, New York.—p. 521.
*Susceptibility to Diphtheria (Schick Test Positive), with Reference to Inheritance of Blood Groups. H. Hirszfeld, L. Hirszfeld and H. Brokman, Warsaw, Poland.—p. 571.
Differentiation of Various Breeds of Sheep by Serologic Methods. W. Bialkuskia and B. Kacahowski, Warsaw, Poland.—p. 593.

Production of Precipitins for Ragweed Pollen.—Parker's experiments throw out Coca's main argument for the non-anaphylactic nature of hay-fever, which was based on the fact that pollens were not precipitinogenic. Parker believes that this work has a definite bearing on the theoretical conception of multiple sensitization, for if, as is generally conceded, anaphylactic sensitization is dependent on precipitin production and if the production of precipitins for an antigen confers upon the organism a greater ability to produce precipitins for a heterologous antigen, a possible explanation is apparent for the prevalence of multiple sensitization in human beings.

Specific Hypersensitiveness.—Four hundred and sixty-two selected cases of clinical hypersensitiveness, with positive tests, form the basis of the study reported on by Spain and Cooke.

Susceptibility to Diphtheria.—According to the Hirszfelds and Brokman susceptible children of susceptible parents that may be incapable of becoming immunized, differ in immune biologic respects from the susceptible children of immune parents. On this principle it is necessary to differentiate between the state of passing susceptibility and the state of constant susceptibility constitutionally dependent.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

24: 335-442 (Dec.) 1924

Does Insulin Significantly Affect the Blood Concentration? W. F. Hamilton, H. G. Barbour and J. H. Warner, Louisville, Ky.—p. 335.
Action of Ephedrine, Active Principle of Chinese Drug Ma Huang. K. K. Chen and C. F. Schmidt, Peking, China.—p. 339.
*Study of Anthelmintic Properties of Constituents of Oil of Chenopodium. W. G. Smillie and S. B. Pessoa, Sao Paulo, Brazil.—p. 359.
Bio-Assay of Pituitary Extracts; Action of Standard Infundibular Powder on Secretion of Urine. M. I. Smith and W. T. McClosky, Washington, D. C.—p. 371.
*Dialysis of Physiologically Active Constituents of Infundibulum. M. I. Smith and W. T. McClosky, Washington, D. C.—p. 391.
Comparison of Action of Some Secondary and Tertiary Aromatic Alcohols with Special Reference to Local Anesthesia. J. P. Quigley and A. D. Hirschfelder, Minneapolis.—p. 405.

Anthelmintic Properties of Oil of Chenopodium.—Smillie and Pessoa show that ascaridole is the active anthelmintic principle of chenopodium. It has an extremely powerful action in the removal of hookworms. One cubic centimeter is the proper adult dose. It should be given on an empty stomach in the early morning, and followed in one-half hour by magnesium sulphate. One treatment will remove 95 per cent. of the hookworms harbored (*Necator americanus; Ancylostoma duodenale* are more resistant to the action of the drug). The lighter fractions of oil of chenopodium consist of a mixture of terpenescymene, sylvestrene, possibly phellandrene, methyl salicylate, etc., which have no anthelmintic action. Ascaridole glycol, as well as the glycol anhydride, which are sometimes found in considerable amounts in improperly distilled preparations of oil of chenopodium have no anthelmintic action. Ascaridole is preferable to oil of chenopodium in the treatment of hookworm disease, because it is not a variable mixture of substances but is a pure substance having a definite chemical formula. Ascaridole is not proportionately more toxic than oil of chenopodium. Its greatest disadvantage for field campaign work is its high cost.

Active Constituents of Infundibulum.—Experiments are described by Smith and McClosky giving the diffusion rate of the several physiologically active constituents of the infundibulum through a series of collodion membranes of graded permeability. The uterine stimulating constituent was found to diffuse out rapidly and quantitatively at the same rate as the blood pressure raising constituent. The infundibular constituent affecting renal secretion also appears to

diffuse along with the other constituents at approximately the same rate, though accurate quantitative estimation of this constituent is not possible with the present methods available. The identical diffusion rate of the oxytocic, pressor and renal activities prescnt in infundibular extracts argues in favor of their chemical identity, and confirms the view held by Abel and his collaborators on this matter.

Journal of Radiology, Omaha

5: 369-405 (Nov.) 1924

Heliotherapy in Extrapulmonary Tuberculosis. N. A. Myll, Denver.—p. 369.
Diathermy in Internal Medicine. M. J. Breuer, Lincoln, Neb.—p. 377.
Diathermy in Gynecology. W. B. Chapman, Carthage, Mo.—p. 381.
High Arterial Tension. B. B. Grover, Colorado Springs.—p. 385.
Intranasal Ultraviolet Applications Under Direct Vision. E. G. Linn, Des Moines.—p. 390.

Maine Medical Association Journal, Portland

15: 77-102 (Nov.) 1924

Borderline Between Dentistry and Otolaryngology. F. T. Hill, Kennebec.—p. 77.
Intussusception in Children. H. S. Pratt, Livermore Falls.—p. 85.
Schick Test. E. S. Hall, Westbrook.—p. 93.

Military Surgeon, Washington, D. C.

55: 681-808 (Dec.) 1924

Prevention of Diphtheria in United States Army. P. F. McGuire,—p. 681.
*Serum Prophylaxis of Measles. C. G. Sinclair and S. D. Avery.—p. 697.
Experiments with Active Preparations of Parathyroid Other Than Desiccated Gland. A. M. Hanson.—p. 701.
Medical Service of Royal Spanish Army in Morocco. C. R. Johnson.—p. 719.
Amebic Dysentery in Army. G. H. Scott.—p. 722.
Tuberculosis as War Problem. P. P. Jacobs.—p. 737.
Report on Second International Congress of Military Medicine and Pharmacy. W. S. Bainbridge.—p. 752.

Serum Prophylaxis of Measles.—Measles convalescent serum was given by Sinclair and Avery to eighty close measles contacts with 96.2 per cent. protection and in eight cases of measles with definite modifications of severity of attack.

Missouri State Medical Association Journal, St. Louis

21: 403-439 (Dec.) 1924

Peptic Ulcer. C. J. Hunt, Kansas City.—p. 403.
*Case of Pulmonary Anthrax. H. H. Bell, Cincinnati.—p. 407.
A Way of Living. G. W. Robinson, Kansas City.—p. 409.
Shoes. A. O'Reilly, St. Louis.—p. 417.
*Drainage Material and Covering for Moist Dressings (Cellophane).—G. H. Copher, St. Louis.—p. 418.

Pulmonary Anthrax.—The patient whose case is reported by Bell was in the hospital for fifty-seven days preceding death and showed at necropsy a chronic progressive organizing pneumonia with areas of necrosis. An organism (doubtless *B. anthracis*) was recovered from the heart's blood twenty-one days preceding death. There was no septicemia at the time of death; the spleen, liver, kidneys and lymph nodes contained no bacteria as shown by Gram-Weigert stain, and the lung contained only very few gram-positive bacilli. There were no other organisms in cultures from lungs to account for the condition observed.

Cellulose Drainage Material.—The material used by Copher is known as cellophane. It is made from pure cellulose of wood pulp and is thin, transparent and flexible. It can be sterilized chemically or by boiling.

New Jersey Medical Society Journal, Orange

21: 337-374 (Nov.) 1924

Local Anesthesia; Its Merits and Limitations. M. Danzis, Newark.—p. 348.
Treatment of Diabetes. M. J. Synnott, Montclair.—p. 357.
Removal of Stenson's Duct from Right Antrum by Plastic Methods; Mechanical Counterpart. J. E. Sheehan, New York City.—p. 361.

New Orleans Medical and Surgical Journal

77: 217-258 (Dec.) 1924

Use of Radium in Treatment of Benign and Malignant Conditions of Uterus. T. B. Sellers, New Orleans.—p. 217.
Insulin in Surgical Complications of Diabetes. S. Harris, Birmingham, Ala.—p. 222.
Acute Intestinal Obstruction Necessitating Intestinal Resection. H. R. Shands, Jackson, Miss.—p. 228.
Spinal Cord Tumors: Cases. J. T. Nix, New Orleans.—p. 233.
*Tumor Involving Carotid Sheath. J. E. Knighton, Shreveport, La.—p. 237.
Lye Strictures of Esophagus; Plea for Legislation. R. C. Lynch, New Orleans.—p. 238.
Ectopic Gestation. V. B. Philpot, Houston, Miss.—p. 241.

Tumor of Carotid Sheath.—In Knighton's case a tumor apparently developed within the carotid sheath and produced rather alarming symptoms by pressure on the vagus nerve. The chief complaint was attacks of fainting during which consciousness was completely lost. There was a visible and palpable enlargement in the left anterior triangle of the neck just below and slightly posterior to the angle of the jaw. The tumor, about the size of a medium sized walnut, was removed. It was situated in the carotid canal about the point of division of the common carotid into the internal and external carotids. In order to remove the tumor, the external carotid had to be ligated as it passed over the outer surface of the tumor. The patient made an uneventful recovery from the operation, except that he has suffered complete loss of voice, the recurrent laryngeal nerve having been injured or severed.

Ohio State Medical Journal, Columbus

20: 745-816 (Dec.) 1924

Surgical Physiology of Gastro-Intestinal Tract: So-Called Chronic Appendicitis. C. G. Heyd, New York.—p. 749.
*Management of Surgical Complications in Diabetes Mellitus. C. D. Christie, Cleveland.—p. 756.
*Capillaries in Health and Disease. L. A. Miller, Toledo.—p. 759.
*Anthocyaninemia and Anthocyaninuria. H. O. Ruh and J. A. Garvin, Cleveland.—p. 763.
Criticisms of Technic of Otolaryngologists. J. M. Ingersoll, Cleveland.—p. 764.
*Use of Blood Serum and Ringer's Solution in Pruritus. J. W. Miller, Cincinnati.—p. 766.

Educating Diabetics.—Christie pleads for the more careful instruction of known diabetics with regard to the care of their feet and hands, to reduce the incidence of complications, and for greater care in examining the patient's urine for sugar when treating these types of lesions.

Capillaries in Health and Disease.—In only three of the sixteen cases cited by Miller were the capillaries of the extremely pathologic type. They occurred in patients who were classed as neuropathic, or psychopathic, with histories of illness extending over many years. One had a very bad family history respecting the mental side. And, in these three cases, Miller says, the very deformed capillaries, the many years of vacillating subjective symptoms, the unfavorable inheritance, all point to an ingrained constitutional type, to a congenitally endowed instability, dysergia, disharmony; therefore conforming to Müller's vasoneurotic diathesis. Miller stresses the point that the clinical method of capillary examination gives information as does the sphygmomanometer and clinical thermometer. It is not a means of making a diagnosis.

Anthocyaninemia and Anthocyaninuria.—Thirty children have been seen by Ruh and Garvin whose only symptom was red or "bloody" urine. In each case the red color of the urine was found to be due to beet pigments. The chemical and microscopic examination of each urine showed no other abnormalities. The number of patients seen with beet pigment in the urine is much greater in the spring and summer months, a time when new beets are most available, suggesting a difference in the anthocyanin content of old and new beets (i. e., stored and fresh beets). The pigment of the beet is an anthocyanin; hence its occurrence in the blood serum and urine is termed anthocyaninemia and anthocyaninuria.

Blood Serum and Ringer's Solution Intravenously in Pruritus.—Miller reports some good results from the intravenous injection of Ringer's solution in cases of pruritus. It was used at room temperature in amounts varying from 60 to 250 c.c. When the larger amounts were used, venesection, followed by an infusion, was the usual practice. Sharp reactions occasionally occur. This reaction seemed to be beneficial, for the results were more uniform following its occurrence. Chronic, generalized itching dermatoses (essential pruritus) are frequently benefited by this treatment.

Rhode Island Medical Journal, Providence

7: 185-200 (Dec.) 1924

Effect of Popular Gynecologic Procedures on Future Child-Bearing of Women. J. O. Polak, Brooklyn.—p. 185.
Shock After Delivery in Toxemia of Pregnancy. I. H. Noyes, Providence.—p. 191.

South Carolina Medical Association Journal, Greenville

20: 249-270 (Oct.) 1924

Treatment of Hemorrhoids by Injection Method. T. Brockman, Greer.—p. 247.
Progress of Science of Nutrition. W. Weston, Columbia.—p. 250.
Diagnosis and Treatment of Placenta Praevia. L. A. Wilson, Charleston.—p. 255.
Blood Chemistry. C. C. Craft, Florence.—p. 258.
Office Treatment of Diseases of Anus and Rectum. F. M. Durham, Columbia.—p. 261.

20: 271-294 (Nov.) 1924

Epidemic of Gastro-Intestinal Manifestations at Kingstree. R. W. Sease, Kingstree.—p. 274.
Appendicitis; Treatment. W. B. Sparkman, Greenville.—p. 276.
Significance of Gastric Hemorrhage. A. E. Baber, Charleston.—p. 278.
Congenital Pyloric Stenosis. R. G. Doughty, Columbia.—p. 281.

Southern Medical Journal, Birmingham, Ala.

17: 911-982 (Dec.) 1924

*Vascular Crises in Cerebral Circulation. L. M. Gaines, Atlanta, Ga.—p. 911.
*Regional Distribution of Rheumatic Fever and Rheumatic Heart Disease in United States. T. R. Harrison, Baltimore, and S. A. Levine, Boston.—p. 914.
*Medical Treatment of Chronic Intestinal Stasis. S. K. Simon, New Orleans.—p. 916.
*Certain Aspects of Intestinal Stasis in Pulmonary Tuberculosis. A. W. Calloway, Asheville, N. C.—p. 918.
Therapeutic Fetishism in Pediatrics. J. A. Foote, Washington, D. C.—p. 919.
Pediatrics Popularized. J. R. Snyder, Birmingham, Ala.—p. 923.
Tongue-Tie and Bottle-Fed Baby. S. A. Visanska, Atlanta, Ga.—p. 925.
Opportunity in South for Medical and Public Health Laboratories. H. C. Schmeisser and W. Krauss, Memphis, Tenn.—p. 927.
Trichobezoar in Stomach: Report of Case. S. D. Neely, Muskogee, Okla.—p. 932.
Trypansamid in Neurosyphilis. F. F. Blair, Montgomery, Ala.—p. 933.

Vascular Crises in Cerebral Circulation.—Gaines points out that it is probably not widely recognized that angiospasm in the cerebral circulation may cause groups of symptoms which accurately simulate symptoms which are ordinarily associated with gross changes, such as hemiplegia from thrombosis or embolism. Such a condition may be effective in cases of various types of paralysis and aphasia. The outlook for the patient is quite bright for a given attack, and there may or may not be a repetition of the attack. It would appear from the literature that recurrences are quite frequent, but in two of the three cases reported by Gaines there was only one attack.

Regional Distribution of Rheumatic Fever.—Observations made by Harrison and Levine on the incidence of rheumatic fever and rheumatic heart disease show that these conditions are much more common in Boston than in Richmond, Oklahoma City, New Orleans and Galveston. Baltimore and St. Louis occupy intermediate positions. There seems to be a distinct regional distribution, the disease being least common in the Southern states. The possibility is suggested that the incidence of recurrence of rheumatic attacks may be diminished if affected patients move to sections where the disease is rare.

Treatment of Intestinal Stasis.—The medical measures directed to the relief of intestinal stasis are grouped by Simon under the following headings: diet, abdominal gymnastics, abdominal massage, the transformation of the intestinal flora, and purgation. The results obtained from the use of each of these measures are discussed.

Intestinal Stasis in Pulmonary Tuberculosis.—Until recently the dyspepsia of pulmonary tuberculosis has not been associated with chronic intestinal stasis, but Calloway's work has shown that chronic intestinal stasis does exist in pulmonary tuberculosis, owing to the conditions which favor it. Perhaps no other chronic disease offers so many conditions favorable to chronic intestinal stasis as the digestive disturbance in pulmonary tuberculosis.

Surgery, Gynecology and Obstetrics, Chicago

39: 701-848 (Dec.) 1924

Treatment of Spastic Paralysis by Sympathetic Ramisection. N. D. Royle, Sydney, Australia.—p. 701.
Influence of Sympathetic Nervous System Genesis of Rigidity of Striated Muscle in Spastic Paralysis. J. I. Hunter, Sydney, Australia.—p. 721.
Acute Abdomen. J. B. Deaver, Philadelphia.—p. 744.
*Renal Tuberculosis During Pregnancy. W. E. Stevens, San Francisco.—p. 750.
Closure of Large Femoral and Inguinofemoral Defects. Result of Destruction or Relaxation of Poupart's Ligament. E. Andrews, Chicago.—p. 754.
*Treatment of Staphylococcus and Streptococcus Meningitis by Continuous Drainage of Cisterna Magna. W. E. Dandy, Baltimore.—p. 760.
Five Year End Results Obtained in Carcinoma of Female Pelvic Organs with Radium and Roentgen Ray. H. Schmitz, Chicago.—p. 775.
*Malignant Epithelial Tumors of Thyroid. A. Graham, Cleveland.—p. 781.
Osteochondral Fracture of Knee Joint: Three Cases. A. Krida, New York.—p. 791.
Myositis Ossificans. T. P. Noble, Rochester, Minn.—p. 795.
*Meningocerebral Adhesions. Results of Cerebral Incision and Cranioplasty. W. G. Penfield, New York.—p. 803.
Fibrosarcoma of Transverse Colon. F. W. Rankin and J. C. Crager, Lexington, Ky.—p. 811.
Cancer of Prostate Treated by Perineal Prostatomy with Thermo-Electric Coagulation. B. C. Corbus and V. J. O'Conor, Chicago.—p. 818.
Reduction and Control of Unmanageable Fractures by Means of Metal Pry Pin. J. S. Welch, Lincoln, Neb.—p. 822.
Comfortable Apparatus in Treatment of Clavicle Fractures. F. W. McGuire, Buffalo.—p. 826.
Intravesical (Cystoscopic) Treatment of Carcinoma of Bladder, by Implantation of Radium Emanation Tubes. A. Hyman, New York.—p. 827.
Simplified Apparatus for Testing Patency of Fallopian Tubes with Accuracy. R. T. Ferguson, Charlotte, N. C.—p. 831.

Renal Tuberculosis During Pregnancy.—A study of statistics and two cases has shown Stevens the advantage to both mother and child of immediate nephrectomy in the presence of unilateral renal tuberculosis complicating pregnancy. This operation is no more serious for mother and child than nephrectomy because of other pathologic conditions of the kidney during pregnancy. After removal of a tuberculous kidney, tuberculin should be administered, and the patient kept under observation. Pregnancy is permissible if the remaining organ is free from tuberculosis and functioning normally.

Drainage Treatment of Meningitis.—Early continuous drainage of the cisterna magna is advocated by Dandy for the treatment of meningitis in which the infecting organism is staphylococcus and streptococcus. Three of four patients so treated survived: one case of *Streptococcus viridans*, one of *Streptococcus hemolyticus*, and one of *Staphylococcus aureus*. In the unsuccessful case the organism was *Streptococcus hemolyticus*. This method is not urged in other forms of meningitis because it is felt, though not proved, that the character of the inflammatory exudate would probably make drainage impossible.

Malignant Epithelial Tumors of Thyroid.—Graham's paper is the result of a study of 134 cases of malignant tumor of the thyroid. One hundred and eight of these were of epithelial origin. Graham says that at least 90 per cent. of malignant tumors arising from thyroid epithelium have their origin in preexisting adenomata. The most constant single indication of thyroid epithelial malignancy is invasion of the blood vessels. Scirrhus and papilliferous adenocarcinoma are the only two types of epithelial malignancy in which invasion of the blood vessels has not been observed. These two types together constitute about 15 per cent. of the total and are primary lymphatic invaders. The term carcinoma is proper for epithelial tumors of the thyroid that are malignant regardless of their microscopic appearance. The term malignant adenoma is useful and convenient for the purpose of denoting a subgroup under carcinoma but is not, strictly speaking, correct terminology.

Meningocerebral Adhesions.—Penfield has found that transplantation of various tissues to the surface of the brain is followed by rapid growth of a layer of fibroblasts above and beneath the transplant. Such procedures are useless if their purpose is to prevent adhesions, for fibroblasts grow wherever the conditions are suitable, as do organisms in a contaminated wound. Thus the transplant is incorporated in the adhesion of the brain to its covering.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

2: 1087-1144 (Dec. 13) 1924

*Treatment of Mobile Backward Displacement of Uterus. A. Donald.—p. 1087.

*Operative Treatment of Knee Flexion in Poliomyelitis. S. A. Smith.—p. 1092.

*Theoretical Food Requirements of Infants. C. B. Fleming.—p. 1093.

Immunity. R. A. O'Brien, P. Hartley, T. J. Mackie, W. J. Tulloch, L. S. Davidson, D. Campbell, E. M. Dunlop and R. Row.—p. 1095.

Treatment of Mobile Backward Displacement of Uterus.—Donald's views on the treatment of mobile backward displacement of the uterus may be summed up as follows: The great majority of cases of retroversion in which treatment is required are cases in which the symptoms are mainly those of disturbed function. The treatment, therefore, is the same as for cases of chronic endometritis—namely curetting. In a few cases in which there is advanced chronic metritis hysterectomy is justifiable. Pessary treatment is indicated as a temporary measure in some cases of sterility and of early pregnancy associated with retroversion. It may also be indicated in a small proportion of cases in which the backward displacement gives rise to discomfort, provided that for some reason the case is not suitable for operation or the patient refuses. Suspension operations are no cure for symptoms of chronic endometritis; when these are present curetting is indicated. In a small proportion of cases—probably not 10 per cent.—when the patient complains of pelvic discomfort or pain a suspension operation may be necessary; but only after curetting has been given a good trial.

Operative Treatment of Knee Flexion in Poliomyelitis.—Of the cases reported by Smith three were bilateral and eleven unilateral; all displayed an extreme degree of paralysis, muscular power, if present, being represented solely by the ileopsoas or the tensor fasciae femoris. None of the bilateral case patients had attempted to walk since the onset of the disease, and two of these patients had never walked. All the unilateral cases were "dangle legs," and walked either with two crutches or with one crutch on the affected side round which the withered and useless limb was crooked. Where the triple deformity of hip flexion, knee flexion and talipes equinovarus existed, as in most of the cases, the knee condition was dealt with first; this was followed by a Soutter's operation where required, and finally reduction of the foot deformity with stabilization finished the operative sequence. Twelve cases were of pure flexion. Two cases had marked posterior luxation and external rotation of the tibia in consequence of the biceps alone retaining function. Smith approaches the knee joint from behind where hamstring tendons are tight (eleven cases) all should be divided, care being taken that the external popliteal nerve is freed from the inner surface of the biceps muscle at the point of section of the latter. The inner head of the gastrocnemius is isolated, divided at its origin, and the muscle turned down. Transverse section of the capsule is accompanied by forcible extension of the leg. No very definite extension is gained until the posterior ligament is fully divided from side to side; this section includes the short external lateral ligament and the tendon of the popliteus. On section of the posterior crucial ligament the limb easily extends, often by its own weight. Passive movements of the knee are encouraged in all cases, so that in adults a jointed calliper can be substituted later.

Food Requirements of Infants.—It is suggested by Fleming that during the first year of life infants who are within 30 per cent. of the expected weight for the age should receive a diet of a value of 100 calories per kilogram of expected weight per diem, and that below this a diet of gradually decreasing caloric value should be given.

Edinburgh Medical Journal

32: 605-666 (Nov.) 1924

*Treatment of Anæmia by Spleen and Red Bone Marrow Extract. H. B. Porteus.—p. 605.

Functional Activity with Overgrowth of Accessory Cervical Thyroid Modifies Hypothyroidism Which Followed Partial Thyroidectomy. D. M. Greig.—p. 614.

*Acute Intestinal Obstruction Due to Undigested Fruit. R. C. Alexander.—p. 617.

Snake-Bite in Iraq. H. C. Sinderson.—p. 620.

Spleen and Red Bone Marrow Extract for Anemia.—Four cases of anemia were treated by Porteus with the combined extracts of spleen and bone marrow. The extract appeared to have no effect on the resistance of the cells to hemolysis within the limits taken, all the cases showing a definitely increased resistance to hemolysis from the start of the observations.

Fig and Raisin Cause Intestinal Obstruction.—Alexander reports a case in which a single dried fig, swallowed whole, led to symptoms of intestinal obstruction. At operation the fig was found just above the ileocecal valve. The fig had been swallowed whole. In its passage down the alimentary tract it had absorbed fluid and swelled sufficiently to block the intestinal lumen. The intestinal obstruction was so acute as to cause death within twelve hours, in spite of its relief by operation. In another case, a raisin became impacted about 6 feet below the duodenojejunal flexure with symptoms of obstruction.

Indian Medical Gazette, Calcutta

59: 533-590 (Nov.) 1924

Animals as Disseminators of Hookworm Eggs and Larvae. A. C. Chandler.—p. 533.

Indian Santonin. R. N. Chopra and A. C. Chandler.—p 537.

*Pharmacologic Action and Therapeutic Properties of Kuth Root—Saussurea Lappa. R. N. Chopra and P. De.—p. 540.

Surgical Sundries. C. A. Gourlay.—p. 544.

Malaria in Hill Stations in or Near Eastern Himalayas. C. Strikland.—p. 549.

Relative Value of Diagnostic Methods and Evidence of Cure in Kala-Azar. H. E. Shortt.—p. 551.

Cholera Epidemic in Bombay, 1923. P. T. Patel.—p. 552.

*Treatment of Cholera by Various Methods. S. N. Chatterjee.—p. 554.

Routine Blood Cultures. G. Shanks.—p. 557.

*Cause of Pemphigus Contagiosus (Manson). J. Cunningham and S. Ramakrishnan.—p. 559.

Aldehyde Test in Schistosomum Hematobium Infection. R. B. Lal.—p. 560.

Use of Iodin Intravenously in Pyemia. P. Bell.—p. 562.

Kuth Root; Saussurea Lappa.—Chopra and De have made a chemical, pharmacologic and clinical study of this drug. They state that the active principles of *Saussurea lappa* are: (*a*) an essential oil; (*b*) a glucosid; (*c*) an alkaloid. The essential oil and the glucosid are pharmacologically active bodies. The alkaloid is less active. The essential oil has strong antiseptic and disinfectant properties especially against the streptococcus and staphylococcus; the alkaloid and the glucosid have little or no effect in this direction. The glucosid causes a small but a persistent rise of blood pressure; the essential oil does this to a lesser degree. Both the glucosid and the essential oil have a slight but a definite bronchodilatant effect. The alkaloid is inactive in this respect. The powdered root and the alcoholic extract are expectorant and are beneficial in asthma. They cut down attacks and reduce their frequency. The drug has no anthelmintic properties.

Kaolin in Cholera.—Chatterjee reports on the treatment of cholera with kaolin, potassium permanganate, essential oils and Rogers' combination of permanganate, calcium and hypertonic saline solution. He favors a combination of kaolin and potassium permanganate.

Cause of Pemphigus Contagiosus.—In hundreds of cases examined bacteriologically by Cunningham and Ramakrishnan, *Aurococcus* (of Winslow and Rogers, 1905) was constantly present, particularly in the later stages, once the contents of the vesicle have become cloudy. In earlier vesicles, however, they frequently isolated a streptococcus. They regard this streptococcus as the primary cause and *Aurococcus* a secondary infection occurring in the more mature bullae. With a view to determining the exact position of this streptococcus, they examined in detail the organisms grown from twenty-four typical cases of the disease. In each case the streptococcus was found. In smears from the fluid of the blister the organism appears as a small gram-positive diplococcus. It has long been customary in Madras to treat the affection by means of a vaccine prepared from this organism which is known as the "pemphigus" streptococcus. The vaccine is administered in doses of 5, 10, 15 and 20 millions at

intervals of from four to six days. It is rarely, however, that the full four doses are required, the condition disappearing after the second or third dose with the greatest regularity.

Journal of Laryngology and Otology, Edinburgh

39: 605-676 (Nov.) 1924

Aural Surgery at Fever Hospital. F. B. Gilhespy.—p. 605.
*Otitis Media in Measles. W. T. Gardiner.—p. 614.
Radiography of Temporal Bone in Ear Disease. A. Plum.—p. 618.
*Cases of Tuberculous Laryngitis in Children. C. D. S. Agassiz.—p. 628.
Tumor of Carotid Body. D. Guthrie.—p. 635.
*Four Cases of Brain Abscess. J. M. Wishart.—p. 638.

39: 677-761 (Dec.) 1924

Experimental Basis for Theories of Vestibular Function. R. Magnus.—p. 677.
Labyrinthine Compensatory Eye Positions in Patients. A. de Kleijn and C. Versteegh.—p. 686.
Vertigo in Relation to Otolith and Neck Reflexes. A. R. Tweedie.—p. 691.
Case of Lymphosarcoma of Mediastinum Suggesting Foreign Body in Right Bronchus. J. B. Cavenagh.—p. 702.

Otitis Media in Measles.—Out of 1,331 cases of measles admitted to hospital, 181, or 13.5 per cent., developed otitis media. Five of these latter cases developed a mastoid complication. The organism in all cases was a pure streptococcus, and in two of the cases it was hemolytic. In addition to the five cases mentioned, two cases of mixed infection—scarlet fever and measles—developed mastoid disease.

Tuberculous Laryngitis in Children.—Eleven cases of tuberculosis of the larynx in children under 16 years of age who were suffering from pulmonary tuberculosis are reported by Agassiz. In all cases but one the diagnosis of pulmonary tuberculosis was confirmed by the finding of tubercle bacilli in the sputum, but, in the single case in which this confirmation was lacking, the physical signs and symptoms were of such a character as to leave very little doubt as to the diagnosis. In all the cases the absence of marked symptoms of laryngeal involvement was a conspicuous feature. In none has there been any dysphagia or cough, other than might be accounted for by the condition of the lungs. As a rule, the condition does not appear to be extensive. Swelling and redness of the arytenoids, with or without tubercular deposits or ulceration of the cords, is apparently the most common lesion. Marked ulceration of the cords or involvement of a large area of the larynx has not been observed among these cases.

Brain Abscess.—The cases cited by Wishart, two of abscess of the frontal lobe, one of the temporosphenoidal lobe, and one of the cerebellum, showed none, or very few, of the clinical features of brain abscess. In three of the cases the abscess was only diagnosed at the operation.

Journal of Tropical Medicine and Hygiene, London

27: 299-314 (Nov. 15) 1924

*Experimental Yellow Fever. H. R. Muller.—p. 299.
*Pruritus Ani of Mycotic Origin. A. Castellani.—p. 304.
Helminthiasis in Sierra Leone Protectorate. M. C. F. Easman.—p. 305.
*Case of Spontaneous Rupture of Spleen. N. Villalobos.—p. 307.

Experimental Yellow Fever.—Guinea-pigs, puppies and a monkey (*Cebus macrocephalus*) were experimentally infected with yellow fever by Muller. The histologic changes, although varying in degree, were similar to those found in human yellow fever. In experimental yellow fever in guinea-pigs a steady and persistent leukopenia of moderate degree during the course of severe infections is the rule. In occasional instances an initial or a preagonic leukocytosis may be present. In extremely mild infections there may be a slight leukopenia, or a mild leukocytosis during the febrile period, according to the individual case. The number of red cells usually remained within normal limits, although a marked reduction occasionally took place, and in some instances there was even a slight increase. The hemoglobin was generally normal. In some animals it was a trifle below the normal. These findings are similar to those of yellow fever in man.

Pruritus Ani of Mycotic Origin.—In eleven cases of pruritus ani, Castellani has grown fungi from scrapings of the anoperianal region, fungi of the genus epidermophyton and tricophyton; *Epidermophyton cruris* Castellani 1905 (*E. inguinale* Sabouraud 1907) in eight cases; *E. rubrum* Castellani 1909, in two cases; and a tricophyton not yet classified in one case. These fungi apparently remain dormant in the anoperianal region for a long time, causing severe pruritus, but practically no objective symptoms, though if the region is examined carefully, minute, slightly raised, red, infiltrated patches may not rarely be seen. An eczematous dermatitis due to scratching may also develop, and a secondary streptococcal infection may become engrafted on the mycotic condition. Castellani used with extremely good results Deeks' antimycotic ointment. The formula is as follows: salicylic acid, 4 parts; bismuth subnitrate, 10 parts; mercuric salicylate, 4 parts; oil of eucalyptus, 10 parts; petrolatum and lanolin sufficient to make up to 100 parts. Painting the parts with a strong lotion of potassium permanganate (25 grains to 1 ounce of water) is useful in certain cases, also an ointment containing salicylic acid and sulphur (15 grains of each to 1 ounce of petrolatum). In very chronic cases roentgen-ray treatment is often efficacious. When an eczematous dermatitis due to scratching is present with severe acute symptoms of inflammation, a soothing treatment should be used first, such as lead lofion, to be followed by the antimycotic measures when the acute symptoms have disappeared.

Spontaneous Rupture of Spleen.—A man, aged 38, entered the hospital complaining of severe pain in the abdomen. He stated that he had always been healthy and remembered only having had a pain in the abdomen about twenty years previously, which had lasted for a considerable time. Eight days previous to his admission to the hospital, he was suddenly awakened from sleep with a severe pain in his abdomen, sharp and cutting in character, and more or less continuous in intensity. He was nauseated but did not vomit until the third day following the attack. Respirations were rapid and shallow. On attempting deep inspiration the pain became greatly intensified, particularly in the left lower chest and upper abdomen. There was an inclination to cough, which also proved painful. There was slight abdominal distention more marked in the upper part; there was rigidity of the abdominal muscles over the left superior quadrant, with general abdominal tenderness, particularly marked over the left superior quadrant. There were vague signs of free fluid in the peritoneal cavity, with considerable dulness on percussion in the left flank below the costal margin. Villalobos made a tentative diagnosis of hemorrhage from the spleen and recommended operation. Several clots of blood about the size of the fist were found in the splenic region and about 500 c.c. of uncoagulated blood in the abdominal cavity. The spleen was adherent to the posterior base of the diaphragm, and presented two well marked lacerations on either side of the hilum, about 6 cm. long and 2 cm. wide. The hemorrhage from the spleen had ceased. There was no history of trauma in this case.

Lancet, London

2: 1161-1216 (Dec. 6) 1924

*Sleep, Sleeplessness and Sleepiness. F. Mott.—p. 1161.
Use of Suction in Surgery. N. C. Lake.—p. 1166.
*Intubation of Common Bile Duct for Stricture. V. Z. Cope.—p. 1169.
Fibrocystic Disease of Bone. J. B. G. Muir.—p. 1170.
Case of Osteitis Fibrosa. H. W. Southgate.—p. 1172.
*Inherited Syphilis and Tuberculosis. W. T. Munro.—p. 1173.

Normal Sleep.—Mott emphasizes that it should always be our main endeavor to restore the habit of normal sleep, by the ascertainment of the causes of sleeplessness and removal thereof, rather than to induce sleep by giving hypnotics.

Intubation for Stricture of Common Bile Duct.—In a case cited, Cope dilated the strictured portion of the cystic duct by means of a Lister's bougie, and then intubated the stricture with a rubber drainage tube which was left in the duct. For fourteen days after the operation the bile continued to come away through the abdominal wound, but then the wound completely healed and the stools regained their normal color, and the patient left the hospital looking and feeling well.

Inherited Syphilis and Tuberculosis.—The results obtained and views formed from an investigation into the incidence of inherited syphilis among 100 children are detailed by Munro. The case against syphilis as predisposing to a subsequent

tuberculous infeciton is not proved. Munro advises that antisyphilitic remedies must be used with caution.

92: 1217-1266 (Dec. 13) 1924

Invalidity from Chronic Arthritis. J. R. Kerr.—p. 1217.
Chronic Backache in Gynecology. D. Dougal.—p. 1220.
*Massive Collapse of Lung in Acute Poliomyelitis. J. C. Regan.—p. 1222.
*Conjugal Tuberculosis. S. Rowland.—p. 1224.
Prevention of Stillbirths. G. I. Strachan.—p. 1227.
Femoral Hernia Operation by Raux Method. F. Harvey.—p. 1229.
*Sarcoma in Children. D. R. Blunn.—p. 1230.
Avulsion of Anterior Superior Iliac Spine Treated by Operation. A. G. Ord.—p. 1230.

Collapse of Lung in Poliomyelitis.—A case of acute poliomyelitis is reported by Regan in which there occurred a massive collapse of the lower lobes of the lungs, involving, first, predominantly one side and, later, the other. Atelectasis in poliomyelitis is a complication of considerable rarity, and could not have been produced by any of the commonly recognized causes of the condition. Two possible explanations are considered by Regan: (1) The compression of the bases of the lungs by the paretic but overactive diaphragm which kept pace with the dyspneic respiration which was so peculiar to the case; and (2) the paralysis of the bronchodilator fibers or the overactivity of the bronchoconstrictor fibers of the vagospinal nerves, in either case leading to constrictor action and a collapse of the dependent lung. While the former explanation cannot be excluded as the primary cause, the latter may be more logically incriminated in the case reported, owing to the concomitant existence of a cardiorespiratory syndrome of bulbar origin. The possibility of a paralytic atelectasis should be given more serious thought in the future both from the experimental and clinical standpoints, so that if it really occurs, as this case is suggestive in indicating, its existence may be established on a more definite basis.

Conjugal Tuberculosis.—Rowland is of the opinion that conjugal tuberculosis is rare. The death rate from phthisis of the spouses of tuberculous persons varies little from that for the general population of a corresponding age. Ideal conditions for infection exist, but infection rarely occurs owing to the age of greatest susceptibility having passed by the time the marriage age is reached. Rowland's findings support the view that infection usually occurs during childhood, hence, the advisability of protecting children whose parents are suffering from open phthisis. On these lines the Grancher system is founded, and is being worked successfully in France. When conjugal infection does occur the disease usually runs a relatively short course.

Sarcoma in Children.—One of Blunn's cases was a myxosarcoma of the mastoid and the other case was one of osteosarcoma of the malar bone. The children were 4½ and 8 years of age, respectively.

Bulletin de l'Académie de Médecine, Paris

92: 1273-1310 (Dec. 2) 1924

Social Insurance and Practice of Medicine in Alsace-Lorraine. G. Weiss.—p. 1278.
Fragment Method in Bone Grafts. L. Imbert.—p. 1285.
Action of Deep Radiotherapy on Hydatid Cysts. J. Arce.—p. 1290.
*Serum from Syphilized Llamas in Treatment of Syphilis in Man. Jaureguy and Lancelotti.—p. 1295.
Anatoxin in Vaccination Against Diphtheria in Epidemics. C. Zoeller.—p. 1299.
Physiologic Artificial Leg. G. Bidou.—p. 1303.
Biologic Action of Sodium Citrate. Normet.—p. 1306.

Serum from Immunized Llamas in Treatment of Syphilis.—Jaureguy and Lancelotti have been experimenting with the South American llama for twelve years. Their historical research, reaching back to the preColumbian period, suggests that this cameloid ruminant may have been the original source of syphilis. The etiology, pathogenesis and symptoms in the llama are analogous to those in man, and the disease is reciprocally transmitted. Pure cultures were obtained, the llama immunized, and its serum used first in treatment of syphilized llamas. Those treated in the chancre period were cured, and some of them are still alive ten years later, while the nontreated all died in from twenty-two to thirty-six months. The descendants of the cured did not present signs of congenital syphilis, even in four generations. The serum, tried in man, seemed to shorten the course of the chancre, and to reduce rapidly the size of the enlarged glands. The biologic reactions soon became negative. A dose of 1 c.c. injected subcutaneously, five minutes before an intravenous injection of arsphenamin, prevented phenomena of intolerance in twenty patients subject to nitritoid crises or other disturbances under arsphenamin. Good results were noted after intraspinal injections of the serum (following removal of an equal amount of cerebrospinal fluid) in cases of progressive paralysis. The treatment was more rapidly successful when employed in the early stages of syphilis. In six subjects treated in the primary stage, and long under observation, among 100 treated in the last three years, the reactions are still negative. Jaureguy and Lancelotti recognize that the absolute efficacy of this form of serotherapy cannot be established for ten or twenty years, but they are convinced that the serum of syphilized llamas represents great progress in the treatment of syphilis with a rational and harmless reinforcing of the natural resisting forces.

Comptes Rendus de la Société de Biologie, Paris

91: 1235-1298 (Dec. 12) 1924. Partial Index

Physiologic Action of Ouabain. C. Laubry and L. Deglaude.—p. 1236.
*Cultures of Neurovaccine on Skin. Nicolau and Poincloux.—p. 1239.
*Transmission of Tuberculous Antibodies. Debré and Lelong.—p. 1242.
Injection of Antiovarian Serum into Cock. J. Cotte.—p. 1252.
Mechanism of Action of Mineral Water in Cure of Malaria. Gabriel.—p. 1255.
*Glandular Epithelioma. Gleize-Rambal and Robert.—p. 1260.
Structure of Embryoma in Testicle. A. Peyron and F. Corsy.—p. 1263.
*Activity of Cells After Irradiation. Ancel and Vintemberger.—p. 1267.
*Action of Roentgen Ray on Mitosis. Idem.—p. 1271.
*Inhibiting Action of Organ Extracts. R. Courrier.—p. 1274.
Formation of Two Kinds of Eggs by Worm. P. de Beauchamp.—p. 1280.
Microtest for Chloroform in Blood and Tissues. M. Nicloux.—p. 1282.
*Fixation of Chloroform. M. Nicloux and A. Yovanovitch.—p. 1285.
*The Plasma During Anaphylactic Shock. Blum et al.—p. 1287.
*Changes in Blood in Peptone Shock. Blum et al.—p. 1289.
Acidosis and Calcium in Plasma. Blum et al.—p. 1291.
Action of Carbon Dioxid on Calcium in Blood. Blum et al.—p. 1292.
*Idiosyncrasy. H. Hirsafeld and Prokopowicz-Wierzbowska.—p. 1295.

Cultures of Neurovaccine on Human Skin.—Nicolau and Poincloux inoculated two men simultaneously with neurovaccine on one arm and ordinary vaccine on the other. The neurovaccine after having produced the typical pustule in man, did not lose its specific properties. Applied afterward to the skin of a rabbit, it caused an exanthem different from that of the usual cowpox pustule. It had also preserved its special affinity for nerve tissue.

Transmission of Tuberculosis Antibodies from Mother to Fetus.—Debré and Lelong's examination of the blood in sixty-nine infants, separated from their tuberculous mothers before contagion could occur, proved that transmission of the antibodies from mother to fetus is frequent. The placenta, however, may retain a part or the whole of the antibodies. The placenta seems also to cause concentration or reactivation of the antibodies, since their amount may be higher in the blood of the umbilical cord than in the maternal blood. Or the antibodies may appear in the cord blood, while they were not evident in the maternal blood. The tuberculosis antibodies when transmitted do not persist in the blood of the newly born, and they disappear completely after three months. The presence of the antibodies in the blood of the newly born does not coincide with a positive tuberculin reaction, nor with any macroscopic or histologic lesions of tuberculous nature.

Structure of Glandular Epithelioma.—Gleize-Rambal and Robert relate that the process of cell development in a mammary epithelioma described was similar to that in the breast in lactation.

Activity of Cells After Irradiation.—Ancel and Vintemberger conclude from their experiments on frogs that the action of roentgen rays on the cells depends not only on the susceptibility of the cells, but also on their activity after irradiation. The more intense the activity of the cell after irradiation, the more pronounced the lesion.

Susceptibility of Cells to Roentgen Ray During Cell Division.—In Ancel and Vintemberger's experiments, equal doses of roentgen rays produced analogous lesions in hen's eggs, whether the eggs were exposed while in rest or in the stage of karyokinesis.

Possible Inhibiting Action of Specific Organotherapy.—Courrier's research on cats and dogs has confirmed that ingestion of thyroid extract does not always have a homostimulating action, but causes sometimes homo-inhibition. This explains why exophthalmic goiter may be treated by thyroid extract.

Fixation of Chloroform in Tissue During Anesthesia.—With the accurate method, described by Nicloux, for dosage of chloroform in tissues, Nicloux and Yovanovitch found in dogs that the central nervous system, and still more the peripheral nerves take up and retain a large amount of the chloroform. For instance, the vagus retains over 73 mg. of chloroform per hundred gm. of its tissue at the outset of the anesthesia, and 166 mg. when the animal is dying. A muscle in the same conditions retains 9.3 mg. and 25.1 mg. The presence of the anesthetic in the nerves is the most important factor in the mechanism of anesthesia.

Changes in Blood in Serum Sickness and in Anaphylactic Shock.—Blum, Delaville and Van Caulaert noted that in three subjects with serum sickness and in one with anaphylactic asthma, the ultrafiltrable calcium was changed. Its proportion increased considerably, sometimes to 90 per cent. forming in some cases the total calcium content, while the alkali reserve decreased. This condition appeared and disappeared rapidly and a connection seemed evident between the amount of ultrafiltrable calcium and the intensity of the anaphylactic shock. The calcium changes may be the result of some modification of the colloid complex in which the non-dialyzable calcium is bound. Their examination of the blood in dogs and rabbits during peptone shock showed a similar condition. The increase in the calcium is not in relation with the intensity of the acidosis, but rather with its duration. It may be produced in vitro by passing carbon dioxid through the plasma. The reduction in the alkali reserve may be the cause of the increase in ultrafiltrable calcium.

Mechanism of Idiosyncrasy.—Hirszfeld and Prokopowicz-Wierzbowska assert that the idiosyncrasy in man and anaphylaxis in animals are phenomena with a similar, if not identical, mechanism.

Gynécologie et Obstétrique, Paris

20: 385-464 (Dec.) 1924

Use of Forceps. Demelin.—p. 385.
*Indications for Hysterectomy for Fibromas. Bouffart.—p. 410.
Roentgenographic Pelvimetry. Portes and Blanche.—p. 416.

Journal de Radiologie et d'Electrologie, Paris

8: 433-480 (Oct.) 1924. Partial Index

Roentgenologic Cinematography. Lomon and Comandon.—p. 433.
*Action of Roentgen Rays on Enzymes. Guilbert.—p. 440.
*Radium in Treatment of Angioma. Mathey-Cornat.—p. 452.
*Radioactivity of Potassium. Gueben.—p. 452.

Action of Roentgen Rays on Ferments of Organs and Cells.—Guilbert concludes from his experiments that roentgen rays exert a gradual paralyzing action on liver catalase, in a solution, the paralysis increasing with the duration and the intensity of the irradiation. The roentgen rays proved also to be a catalyzer for oxidation of epinephrin. No effect from the rays was noted on direct oxydases, while activation with a weak dose, and paralysis with a large dose, were manifest in the peroxydases.

Radium in Treatment of Angioma.—Mathey-Cornat uses radium in preference to electrolysis and to an operation in treatment of angioma. He succeeded with radium in fifteen patients, aged from 2 months to 48 years, with angioma of different sizes. He outlines the technic.

Radiation of Potassium.—Gueben confirms that the radioactivity of potassium is similar to the beta rays of uranium, and seems to be homogeneous, and capable of producing secondary rays. There do not seem to be any alpha rays, emanation or catabolites.

8: 481-528 (Nov.) 1924

*Importance of the Dose in Radiotherapy. A. Gunsett.—p. 481.
*Roentgen-Ray Treatment in Whooping Cough. L. Boner.—p. 509.
Tube for Roentgen Ray. A. Fauconnier.—p. 510.

Significance of the Dose in Roentgen Treatment.—Summarizing the reports on roentgenotherapy, Gunsett concludes that large doses, within a short period, are dangerous on account of the effect on the tumor and on the organism in general. A stimulating effect from small doses has never been positively proved, either on plants, animals, on normal tissues, experimental cancer, or on cancer in man. The facts which seem to demonstrate this in cancer must be ascribed to other causes.

Radiotherapy in Whooping Cough.—Boner reports six cases of whooping cough in children, aged from 8 months to 7 years, in which the paroxysms subsided under roentgen-ray treatment. The disease was of several days to two months' duration. A complete recovery occurred after from one to four sittings. From 1 to 2½ skin units were used in each irradiation; the intervals were four or five days. The sternal region was exposed. The roentgen rays, Boner says, probably act on the diseased tracheobronchial glands in whooping cough.

Paris Médical

453-488 (Dec. 6) 1924

Therapeutics in 1924. F. Rathery.—p. 453.
*Calcium Chlorid in Hemophilia. Carnot and Blamoutier.—p. 467.
Thyroxin. L. Launoy.—p. 471.
Diuretic Action of Mercurial Compounds. Tiffeneau and Boyer.—p. 475.
*Anatoxins. G. Ramon.—p. 480.

Calcium Chlorid in Treatment of Hemophilia.—Carnot and Blamoutier insist that intravenous injections should be preferred to other ways of administration of calcium chlorid. In three cases of grave hemophilia, the injections reduced the coagulation time by thirty-five, twenty-three and sixteen minutes. The tendency to hemorrhages subsided correspondingly to the reduction of coagulation time. It did not seem to be influenced by calcium chlorid given by the mouth. About 20 c.c. of a 5 per cent. solution was usually employed for one intravenous injection. The course consisted of one or two series of ten or twelve injections. Good results were also obtained in two of three children with grave hemophilia and a delayed coagulation, 185 and ninety-two minutes.

Nature and Uses of Anatoxins.—Ramon declares that the discovery that the toxic action of a toxin can be practically annulled by keeping it for a few weeks, with a little formaldehyd, while its antigenic properties are preserved, opens a new chapter in therapeutics. His work in this line has been mentioned repeatedly in these columns, and was recently awarded a prize by the French Académie de médecine.

489-504 (Dec. 13) 1924

*Pyloric Stenosis in Infants. Sufier.—p. 489.
Dosage of Bismuth Salts. A. Gallict.—p. 498.
Shock Treatment of Acute Delirium. A. Porot.—p. 501.

Internal Treatment of Pyloric Stenosis in Infants.—Sufier insists that spasm is an important element in the clinical picture of pyloric stenosis, even when there is hypertrophy of the muscle. Among his 100 cases, the majority were cured by a suitable change of diet and measures addressed to the spasmophilia element. Pylorospasm should be added to the triad of tetany, convulsions and laryngeal spasm. The most unfavorable statistics do not show a mortality of over 6-7 per cent. in cases without surgical treatment, while he has been impressed by the permanent cure up to fifteen years to date under medical measures alone in all but the gravest organic stenosis.

Presse Médicale, Paris

32: 981-988 (Dec. 10) 1924

*Pleurisy with Artificial Pneumothorax. Bernard and Baron.—p. 981.
*Rôle of Fenestrae in Hearing. F. Pedrazzini.—p. 984.

Pleurisy Complicating Artificial Pneumothorax.—In the personal statistics of Bernard and Baron, including 200 patients, pleurisy occurred after an artificial pneumothorax in 60 per cent. of the cases. The pleurisy, which was of undoubted tuberculous nature, appeared under the adhesive form, or the form with effusion. They insist that this pleurisy is not grave, does not impair the curative influence of the pneumothorax, and exerts no unfavorable action on the lungs.

Rôle of Fenestrae Ovalis and Rotunda in Hearing.—Contrary to the opinion in vogue, Pedrazzini agrees with Bonain that the tympanic membrane and the ossicles are not essential

to the function of hearing. (Bonain's communication was summarized in THE JOURNAL, Oct. 25, 1924, p. 1376.) Their function seems to be to complete and perfect the hearing. He asserts that the fenestra ovalis and the fenestra rotunda play an equally important rôle. The perception of sounds is due to concordant changes in the elastic fenestrae. A disturbed correlation in the functioning of both fenestrae is attended by a diminished, or even abolished hearing. As far as the ossicles are concerned, only ankylosis of the stapes entails permanent deafness.

33: 989-1000 (Dec. 13) 1924

*Cinchona Bark in Malaria. G. Caussade and A. Tardieu.—p. 989.
*Intraspinal Anesthesia. E. Matons.—p. 990.
Pilocarpin in Eclampsia. S. Sănătescu.—p. 992.
Arterial Circulation in the Brain. L. Binet.—p. 993.

Cinchona Bark in Treatment of Malaria.—Caussade and Tardieu suggest to use cinchona calisaya bark in cases in which quinin has no more effect. Also in monosymptomatic malaria, with neuritis or headache, in the stage of cachexia, and in pernicious forms of the disease. They administer 8-10 gm. in an alcohol solution, fractioned in two parts, with the meals, giving it in syrup of bitter oranges, and continuing it for ten or fifteen days. Sydenham's method, beginning during the decline of the fever, is indicated in grave cases. It may be, they say, that the quinin slowly liberated by the bark is better assimilated than the isolated quinin, which is largely eliminated with the urine. In one of their cases, sciatica, recurring ten years later, was promptly cured with the bark.

Procain-Caffein in Intraspinal Anesthesia.—Referring to his 107 different operations under intraspinal anesthesia, Matons extols his method of using procain mixed with caffein for the purpose. The fatal outcome in ten cases was in no way connected with the anesthetic. Disturbances, usual with intraspinal anesthesia, and especially with injections of caffein alone, did not occur even in operations of two hours' duration.

Schweizer Archiv für Neurol. u. Psychiatrie, Zurich

15: 3-160, 1924

Action of Oxidation Ferments on Neurons. G. Marinesco.—p. 3.
Mental Sequelae in Epidemic Encephalitis. H. Steck.—p. 27. Conc'n.
Treatment of Epilepsy. N. E. Ouschin and S. M. Ochsenkühndler.—p. 60.
Autopsychic Disorientation in Dementia Praecox. A. Grunecka.—p. 64.
Cell and Albumin Content of Normal Spinal Fluid. A. V. Neel.—p. 70.
Rolandic Convolutions. M. Minkowski.—p. 97. Conc'n.
Jendrassik's View of Hereditary Degeneration. J. Kollarits.—p. 133.
Dementia Praecox. R. Benon.—p. 140.

Schweizerische medizinische Wochenschrift, Basel

54: 1097-1116 (Nov. 27) 1924

Water Metabolism. H. Staub.—p. 1097.
Belladonna. E. Rothlin.—p. 1101.
Pandemic Influenza. J. Seitz.—p. 1105.
Multiple Gliomas of Brain and Cord. H. W. Müller.—p. 1107.

54: 1117-1140 (Dec. 4) 1924

*Theory of Diabetes and Insulin. A. Fleisch.—p. 1117.
*Morphologic Study of Insulin Question. H. v. Meyenburg.—p. 1121.
*Insulin. A. Gigon.—p. 1126.
*Interlobar Pneumothorax. H. Betchov and R. Gilbert.—p. 1129.
Permanent Tremor of Dogs. J. Kollarits.—p. 1131.

Theory of Diabetes and Insulin.—Fleisch believes that the main disturbance in diabetes is in the slow formation of lactacidogen from glucose and phosphoric acid. Insulin catalyzes this reaction. It is possible that it also increases the oxidation of lactic acid.

Morphologic Study of the Insulin Question.—Meyenburg believes that a cooperation of all the cells of the pancreas is necessary for normal sugar metabolism. He injected insulin in different animals, avoiding large, spasm-producing doses. The results in mice were irregular. The liver of rabbits contained constantly much glycogen after the injections. Although this alone may account for the hypoglycemia, he thinks that this is not necessarily the only action of insulin, and points to the possibility of a different mechanism in different animals. No morphologic signs of an injury of the liver were observed. The mitochondria were intact. The fat liver in pancreatectomized dogs kept under insulin may develop in spite of the insulin, not because of it.

Insulin.—Gigon found a much larger increase in the carbon of the blood (including the proteins) after ingestion of glucose, than expected from the increase in glycemia. The injection of insulin is followed by a much larger decrease of the total carbon than of the glucose alone. Ingestion of glucose increases rapidly the acidity of the blood, and as such is an antagonist to the alkalotic tendency of the insulin. He prepared protein-free extracts from various organs in an analogous way to the preparations of insulin. Extracts of lung tissue increased the acidity of the blood; liver extracts decreased it.

Interlobar Pneumothorax.—Betchov and Gilbert describe a case of interlobar pneumothorax with repeated opening into the pleural cavity. A double fistula (one leading to a bronchus and the other into the pleural cavity) accounts for the phenomenon.

Policlinico, Rome

31: 1575-1609 (Dec. 1) 1924

*Immunization Against Diphtheria. A. Baccichetti.—p. 1575.
Contagiousness and Hospitalization in Venereal Diseases. A. Pasini.—p. 1580.
Plastic Operations in Injuries of Skull and Brain. A. Chiasserini.—p. 1583.

Immunization Against Diphtheria.—Baccichetti is opposed to the Schick test and T-A treatment in tuberculous children. Pronounced reactions were also observed in neuropathic children. He prefers the intracutaneous method of vaccination, because it allows to observe better the degree of immunity.

31: 625-672 (Dec. 1) 1924. Medical Section

*Nephritis in Malformation of Kidneys. C. Cipriani.—p. 625.
*Renal Permeability and Drugs. C. Colucci.—p. 643.
*Diathermy in Treatment of Exophthalmic Goiter. U. Nuvoli and C. La Banca.—p. 657.

Nephritis in Malformation of Kidneys.—Cipriani observed two cases of nephritis affecting one kidney while the other kidney was aplastic or in cystic degeneration.

Renal Permeability and Drugs.—Colucci studied the influence of various sympathicotonic (epinephrin and thyroidin) and parasympathicotropic (atropin and pilocarpin) drugs on the elimination of phenolsulphonephthalein. The one practical conclusion which he draws is never to test the kidney function while the patient is under the influence of any of these or other drugs. He also believes that the emotional condition of the patient influences the elimination.

Diathermy in Treatment of Exophthalmic Goiter.—Nuvoli and La Banca extol the results of diathermy of the neck in treatment of exophthalmic goiter. The tachycardia is especially well influenced. They attribute the effects of this treatment—which was introduced by Ghilarducci—to a direct action on the thyroid. Diathermy of the kidney inhibits phlorhizin glycosuria.

Riforma Medica, Naples

40: 1129-1152 (Dec. 1) 1924

*Insulin Treatment. G. Poggio.—p. 1129.
*Vibriones of Water. A. Picazio.—p. 1133.
Serodiagnosis of Tuberculosis. Musella and Marinelli.—p. 1136.
Amebic Colitis. I. Iacono.—p. 1137.

Insulin Treatment.—Poggio studied in sixteen diabetics the influence of insulin on the glycemia, glycosuria, acetonuria and the respiratory quotient. He believes that the small changes of the latter which he observed are not due to an increased oxidation of carbohydrates, but to complex variations of the whole metabolism.

Vibriones of Water.—Picazio had good results with preliminary inoculations in peptone water and transferring the film formed on Endo or Dieudonné mediums, the latter with about double the amount of alkali used in the original.

Archivos Españoles de Pediatría, Madrid

8: 579-642 (Oct.) 1924

*Tardy Stigmas of Premature Birth. J. Estella B. de Castro.—p. 579.
*Ether Treatment of Whooping Cough. R. Giménez Guinea.—p. 605.
*Roentgen Rays in Treatment of Whooping Cough. J. M. L. de Pueblos.—p. 614.
Pulmonary Tuberculosis of Eleven Years' Standing in Girl. J. Carlos Navarro.—p. 616.

Tardy Stigmas of Premature Birth.—Estella describes what he calls the secondary syndrome from premature entrance into the world. The head is often large, with the face suggesting the frog type, while the body may be unusually fat, the arms and legs small, the penis very large. These anomalies develop after the second month of life and gradually subside in two or three years. They are of unmistakably endogenous origin, connected with the premature loss of the maternal hormones. The child seems to suffer in particular from the lack of the mother's thyroid and pituitary secretions, which it would have received through the placenta if it had been retained longer in the uterus. He suggests possible utilization of organotherapy to make up for the deficiency.

Ether Treatment of Whooping Cough.—Giménez Guinea treated 302 children with whooping cough by Andrain's method of intramuscular injection of ether. Up to the age of 6 months, he injected 1 c.c. daily into the buttocks. Above this age, he injected 2, 3 or 5 c.c. at a time on alternate days. The coughing paroxysms became shorter and less severe, and there was no further vomiting after one or two injections. The disease was much shortened, a complete cure being realized with from two to eight or ten injections. Pneumonia developed after the ether was given in only one instance. He reports 250 cured; 35 improved, and 17 not modified.

Roentgen-Ray Treatment of Whooping Cough.—De Puelles has been gratified with the results of roentgen exposures of the chest in whooping cough. He ascribes the benefit to the effect on the enlarged tracheobronchial glands. As these return to normal under the rays, the abolition of the irritation from this source improves conditions generally.

Crónica Médica, Concepción

2:1-52, 1924

History of the Concepción Medical Society. R. Coddou.—p. 1.
*Papaverin and Benzyl Benzoate in Treatment of Spasm. G. Grant B.—p. 9.
Roentgen Rays Versus Vaccine in Acne. H. Fox (New York).—p. 14.
The Time Element in Cholelithiasis. A. L. Cameron (Minneapolis).—p. 23.
"Rejuvenation" Procedures. Ottmar Wilhelm G.—p. 29. Cont'd.

Benzyl Benzoate in Treatment of Spasm.—Grant recommends giving this antispasmodic in a gelatin capsule (0.6 gm. of benzyl benzoate in 0.3 gm. of olive oil). He has found it very useful in relieving spasm in the digestive tract, and especially in chronic gallstone disturbances when operative treatment is not available. He never observed any benefit from the benzoate when given to reduce hypertension, as advocated by others, while it injured the stomach, with loss of appetite.

Memorias do Instituto Oswaldo Cruz, Rio de Janeiro-Manguinhos

2:1-286, 1923. Portuguese and English Edition

Necropsy Findings in a Case of Fused Kidneys. B. Baptista and Cesar Guerreiro.—p. 5.
Laboratory Tests in Diagnosis of Chagas' Disease. E. Villela and Chagas Bicalho.—p. 13.
*Wassermann and Sachs-Georgi Tests in Leprosy. A. E. de Arêa Leão.—p. 47.
*Abscess Plague in Cattle. Octavio Coelho de Magalhães.—p. 71.

Serologic Tests in Leprosy.—De Arêa Leão obtained a positive reaction to the Wassermann test in 50 per cent. of fifty lepers examined, and in 36 per cent. to the Sachs-Georgi test.

Cattle Plague.—Coelho de Magalhães presents a profusely illustrated report on his research on the disease affecting cattle of all ages, but especially calves, known in Brazil as polmões plague on account of the multiple abscesses (polmões) in the skin in one form or stage. One of the forms is known in the literature as Vryburg's disease; others as mal triste, mal do tarde, and pneumo-enteritis. Inoculation of cattle with filtered emulsions of triturated ticks taken from diseased cattle reproduced the disease in 99 per cent. In epidemics the mortality may be 99 or 100 per cent. but in the intervals it averages 10 per cent. With the use of the specific immune serum, the mortality was reduced to 0.6 per cent. among the 511 animals inoculated and kept under observation. The serum was obtained by inoculation of triturated viscera, pus and blood; triturated ticks from diseased animals were added later.

Revista de Cirugía, Buenos Aires

2:121-160, 1924

*Sabanaieff's Osteoplastic Amputation. Pedro Chutro.—p. 121.
Congenital Malformations of the Intestines. Rivarola et al.—p. 136.
*Surgical Anatomy of the Suprahyoid Region. A. Gutiérrez.—p. 149.

Osteoplastic Amputation.—Chutro advocates the Sabanaieff method of amputation whenever there is a scrap of tibia left and enough skin to cover it, but regards it as especially indicated to correct a conical stump causing discomfort. Accidents from vehicles are so frequent and so serious now that amputations are becoming more common once more, and he urges the deliberate application of the Sabanaieff method from the first.

Surgical Anatomy of the Suprahyoid Region.—Six colored plates accompany this account of Gutiérrez's research.

Archiv für klinische Chirurgie, Berlin

133:1-728 (Nov. 24) 1924

*Transactions of Forty-Eighth German Surgical Congress, April, 1924, pp. 1-728.

Borderland Topics at the German Surgical Congress.—The subjects appointed for discussion were surgery of the thorax and lungs, blood transfusion, and fractures. The main addresses were summarized in the Berlin Letter, July 12, 1924, p. 136. Vorschütz described effectual results of own blood treatment in many inflammatory processes, of various kinds, in his experience with 208 cases. He declared that every one carries his own drug store with him. Jungling advocated oxygen for ventriculography, but added that even this is not free from danger, especially with large tumors in the temporal lobe. Von Gaza reported the relief of thirty patients with intense pains in a Head's zone by infiltration of the paravertebral nerves with 15 c.c. of a 0.5 per cent. solution of procain. The relief persisted for months in some of them. In three cases he resected the paravertebral nerves or rami communicantes in treatment of vegetative neuroses of abdominal organs after the procain injection had abolished the pains—thus localizing their source. Severing the rami communicantes abolished the crises on the same side in a recent case of tabes. Schloessmann's compilation of twenty-four families with a hemophilia history embraced 1,600 persons. In some of the families the hemophilia has been traced for six or seven generations. The transmission was always through the daughter from her hemophilic father to the grandsons; never from a hemophilic father directly to the hemophilic son. In ten instances the women presented symptoms suggesting a slight tendency to hemophilia, and these all proved to be transmitters, but true hemophilia was never discovered in any female member of the families. The blood of the transmitting women, however, even those free from any apparent tendency to hemophilia, always showed traces of the characteristics of hemophilia. In respect to the marriage of girls in bleeder families, the potential transmitters can thus be detected by the blood, especially the delay in coagulation and the poor quality of the clot.

Archiv für Verdauungskrankheiten, Berlin

34:1-130 (Oct.) 1924

Pseudo-Anacidity. F. Kauders and O. Porges.—p. 12.
Application of Mineral Mud in Abdominal Diseases. Pewsner.—p. 19.
Action of Bitter Saline Waters on Gastric Secretion. I. Lorid.—p. 25.
*Stomach Tenderness. J. Faust.—p. 31.
Protein Therapy of Peptic Ulcers. L. von Friedrich.—p. 75.
Case of Pseudo-Ileus. M. Elzas.—p. 99.
*Stomach Secretion Under Organotherapy. S. O. Badylkes.—p. 105.
**Paradoxic Rectal Stasis." G. Korn.—p. 128.

Percussion Test of Tenderness of the Digestive Organs.—Comparison of the weekly measure of the area of tenderness on percussion has always afforded Faust valuable guidance in diagnosis and treatment in eight years of experience. He discovered local tenderness in the stomach region in 75 per cent. of the school children examined, and in 50 to 60 per cent. of the adults, and ascribes it to a latent irritation of the stomach. This condition involves the adjacent solar plexus, which then becomes sensitive on percussion, and thus shows the latent pathologic condition of the stomach. Indications of the healing of a gastric ulcer are not dependable until

there is total absence of pain on percussion with the patient standing. Numerous instances of endogenous neurasthenia and neurosis thus reveal their gastro-intestinal origin. Diet and rest treatment may relieve certain features even of incurable affections. The cure and prevention of local tenderness in children will prevent the otherwise consequent developments in adult life.

The Effect of Organotherapy on the Stomach Secretion.—Badylkes performed sixty-eight experiments in healthy young persons. A fine stomach tube was left in place for an hour. Pituitary and large doses of thyroid extract reduced gastric secretion in the fasting stomach and after a farinaceous test meal. Epinephrin increased the acidity in 80 per cent. and reduced it in 20 per cent.; the total secretion was increased in the fasting stomach in 50 per cent., and reduced in 25 per cent. Small doses of desiccated thyroid can increase secretion.

Paradoxic Rectal Stasis.—Korn reports two cases of healthy young schoolboys with incontinence of thin feces, day and night. Treatment was similar to that of Strauss. The etiology in these cases was mental; an earlier mishap from involuntary defecation had caused such fear of a repetition as to check defecation, and result in impaction of the feces in the lower intestine. Both were permanently cured by clearing out the rectum, with a single purge and an oil enema.

Deutsches Archiv für klinische Medizin, Leipzig

145: 257-380 (Nov.) 1924

*Intestinal Putrefaction and Porphyrin. H. Kämmerer et al.—p. 257.
*Spinal Changes in Pernicious Anemia. E. Trömner.—p. 285.
*The True Blood Sugar. Grafe and Sorgen.rei.—p. 294.
Blood Pressure. H. Jansen et al.—p. 310.
Deformity of Spine After Dysentery. Diehl and Krause.—p. 322.
*Pentosuria. O. Adler.—p. 326.
Xanthoprotein Test in Protein-Free Serum. E. Becher.—p. 333.
Serology of Active Tuberculosis. Brinkmann and Beck.—p. 339.
*Phagocytosis. E. v. Philipsborn.—p. 351.
*Epinephrin Test in Hypertension. Deicke and Hülse.—p. 360.
*Epinephrin Test. Kylin and Lidberg.—p. 373.

Intestinal Putrefaction and Porphyrin.—Kämmerer found with his collaborators that inoculation of blood bouillon with specimens of human stool causes frequently a development of porphyrin. Sugar or bile inhibits the reaction, which is due to a synergism of bacilli, with the prevalence of *Bacillus putrificus*.

Spinal Changes in Pernicious Anemia.—Trömner describes seven instances of a spinal affection in pernicious anemia. Its symptoms lasted for from six months to seven years, and were due to combined degeneration of the long tracts. Exaggeration or attenuation of the knee-jerk, Babinski's phenomenon, a gait suggesting ataxia and paresis, and a slight tendency to atrophy are usually present, as also paresthesias.

The True Blood Sugar.—Grafe and Sorgenfrei describe a method for microdetermination of the blood sugar by fermentation. They compared the figures obtained with those of Benedict's reduction test. The results were practically identical in normal subjects and in the nondiabetic (even hyperglycemic) patients. A marked divergence (up to 40 per cent.) was observed in diabetics, especially in grave cases. Insulin and sometimes ingestion of caramel cause a disappearance of these reducing but not fermenting products.

Pentosuria.—Adler describes a case of pentosuria. The sugar was probably a d-ribose.

Phagocytosis.—Philipsborn found lowered phagocytosis in leukocytes from patients with epidemic meningitis, encephalitis, typhoid, and endocarditis from hemolytic streptococci. The leukocytes were tested with India ink. Phagocytosis was exaggerated in certain other diseases, including viridans sepsis, and this was due to both the leukocytes and the serum. The serum alone seemed to account for the lowered phagocytosis. Hemolytic streptococci were taken up only in small amounts by any leukocytes. Myeloblasts and myelocytes showed no phagocytic properties.

Epinephrin Test in Hypertension.—Deicke and Hülse noted a normal reaction to intravenous injection of 0.005 mg. epinephrin in patients with essential hypertension. Hypertension in nephritis was associated with increased sensitivity to epinephrin. They observed in some patients a reduction of the arterial blood pressure with increased venous pressure. They explain it by an oversensitiveness of the lung vessels for epinephrin, which causes a venous stasis.

Epinephrin Test.—Kylin and Lidberg injected intravenously 1 c.c. of a 1:100,000 solution of epinephrin. They found an increased pressure in diabetics who had no hypertension (sympathicotonia) and a decreased in those who had a high blood pressure.

Deutsche medizinische Wochenschrift, Berlin

50: 1677-1744 (Dec. 5) 1924

*The Semicentennial of the Wochenschrift.—pp. 1677-1744.

Retrospect and Outlook.—This issue—in honor of the completion of fifty years of the *Deutsche medizinische Wochenschrift*—contains contributions from thirty prominent authors on the development of medicine in their particular fields. The list includes Bumm, Czerny, Eiselsberg, His, Kraus, Krehl, Meyer, Noorden, Romberg, Rubner, Sahli and Wassermann.

Jahrbuch für Kinderheilkunde, Berlin

107: 259-328 (Dec. 2) 1924

Exfoliating Dermatitis. A. Hotz.—p. 259.
*Intraperitoneal Blood Transfusion. H. Opitz and F. Metis.—p. 269.
*Liver Function Tests in Infants. O. Bossert and H. Loers.—p. 291.
Pathogenesis of Goats' Milk Anemia. Beumer and Wieczorek.—p. 311.

Experiments in Intraperitoneal Transfusion of Blood.—Opiz and Metis found in tests on twelve animals (dogs and rabbits) that foreign blood, defibrinated or citrated, was taken up in the circulation as quickly as own blood. Experiments on thirteen infants showed that foreign erythrocytes introduced intraperitoneally can reappear in full count in the blood stream. Resorption may begin in a few hours and be completed in sixteen hours, although this generally requires three or four days. Opitz and Metis believe that intraperitoneal blood infusion is a practicable substitute for intravenous blood transfusion and causes fewer secondary reactions. Defibrinated blood exerted no unfavorable influence on the peritoneum or the abdominal organs; the harmlessness of citrated blood transfusions has not yet been demonstrated.

Methylene Blue and Indigocarmin in Bile Tests of Liver Function.—Bossert and Loers injected subcutaneously, with the duodenal tube in place, 5 c.c. of a 2 per cent. solution of methylene blue, or 5 c.c. of a 0.2 per cent. solution of indigocarmin. Eighty-two experiments were made in seventy infants. In normal children, with few exceptions, the methylene blue appeared in the bile in forty to sixty minutes, the indigocarmin in twenty to thirty minutes; with impaired hepatic function the elimination of methylene blue was accelerated, of indigo carmin retarded. The methylene blue test is more sensitive. In infants with grave tuberculosis or syphilis the methylene blue appeared most rapidly and correspondingly, the indigocarmin most slowly. Similar responses occurred in all cases of marked acute and some chronic nutritional disturbances. In four infants with pseudoleukemic anemia, the reaction was approximately normal. In two cases of icterus neonatorum and one of infectious jaundice (colon bacillus) there was rapid methylene blue excretion, while in one case of icterus neonatorum the reaction to the indigocarmin test was normal.

Klinische Wochenschrift, Berlin

3: 2225-2272 (Dec. 2) 1924

*Outdoor Sports and the Heart. H. Herxheimer.—p. 2225.
*Myelography. H. Peiper and H. Klose.—p. 2227.
*A Dog Without Hemispheres and Striatum. K. Dresel.—p. 2231.
*Changes of Muscular Irritability. H. Behrendt and R. Hopmann.—p. 2233.
*Microscopy of Capillaries. W. Redisch.—p. 2235.
*Experiments on Insulin. E. Putter.—p. 2239.
Surgery and Function of the Thyroid. H. L. Kowitz.—p. 2242.
Psychotherapy. W. Unger.—p. 2243.
Jaundice of the New-Born and Hemoclastic Crisis. Joseph and Guskar.—p. 2247.
*Research on Insulin. H. Baur and R. Kuhn.—p. 2248.
Myxedema. P. Matadorff.—p. 2250.
*Pleurisy with Artificial Pneumothorax. P. Deusl.—p. 2251.
Physical and Chemical Basis of Agglutination of Cells. Netter.—p. 2254.

Outdoor Sports and the Heart.—Herxheimer reviews the recent literature on measurements of the heart in participants in outdoor sports. It remains practically unchanged when the effort is short and long intervals are interposed, for example, in heavy athletics, short runs, short swims, rugby, fencing and boxing. The musculature of the body increases in size. Contrary to this, the muscles do not hypertrophy, while the heart becomes enlarged, in all sports requiring a prolonged exertion, such as Marathon runs, skiing, cycling and rowing. Experimental and clinical findings indicate that the increased size of the heart in these instances is due rather to hypertrophy than to dilatation. Soon after the training is discontinued (in rats in eight days, according to Secher), the heart returns to the previous size. Therefore he believes that the hypertrophy is harmless.

Myelography.—Peiper and Klose observed no grave accidents after intraspinal injections of iodized oil for roentgenography. In spite of this, they emphasize that the method is in the stage of development, and declare it a *noli me tangere* for the practitioner at present.

A Dog Without Hemispheres and Striatum.—Dresel succeeded in keeping a dog alive for three months after the extirpation of both hemispheres and of the striate body. While a dog without hemispheres is still able to learn things and look for food, his dog lacked every trace of spontaneity and reacted to stimuli only by fleeing from them. The food had to be put into his pharynx. Unilateral extirpation was followed by circular (*manège*) movements toward the operated side. Turning toward the opposite side was impossible. The substantia nigra degenerated early; no rigidity was observed, only propulsion and retropulsion in the dog operated on both sides. He emphasizes the differences between experimental animals and man. Man without the hemispheres behaves approximately like a dog without both hemispheres and the striate bodies.

Changes of Muscular Irritability.—Behrendt and Hopmann found an increased muscular reaction to galvanic stimuli in subjects having constantly alkaline urine (p_H above 6.5), and the opposite in subjects with acid urine. The change was striking in some diabetics during acidosis and after it. Pituitary extracts and especially insulin increased the irritability of muscles. They consider the electric test as the best index of vagotonia (increased irritability of muscles) or sympathicotonia. The alkalotic or acid tendency of the metabolism is a physiologic constitutional phenomenon. It is not correct to class the hypersensitive subjects as latent tetany. They obtained normal electric responses in them after giving 10 gm. of ammonium chlorid daily for a few days, but this induced a feeling of sickness. For these individuals, the alkalotic tendency and oversensitiveness mean health.

Microscopy of Capillaries.—Redisch lays more stress on the significance of microscopy of the capillaries for estimation of their condition than for diagnosis. Intravenous injection of insulin causes a much better flow of blood in the tissues. It lowers the blood pressure and counteracts injections of epinephrin. The gradual expression of blood from the arterial part of the capillary into the venous, and from the latter into larger veins, after death, was plainly seen by the microscope.

Experiments on Insulin.—Putter confirms the comparative independence of the spasms from the level of the blood sugar in rabbits after injections of insulin. He finds that the convulsions are not reliable as a basis for standardization of the drug. The lower the level of the blood sugar when convulsions develop, the more valuable the preparation.

Research on Insulin.—Baur and Kuhn determined the lactic acid and hydrogen ion concentration in the blood of goats during the action of insulin. In the first phase, the increase in lactic acid and acidity is marked. Although the blood sugar may reach its minimum, practically no signs of the hypoglycemia syndrome occur until the lactic acid is lowered. Jodlbauer found that the calcium concentration sinks in the second phase from 13.5 to 7-9 mg. per hundred cubic centimeters of blood. They show that simple expulsion of carbon dioxid from the blood, due to the increased acidity in the first phase, may be sufficient to account for the high respiratory quotient observed after insulin. They add observations of *vita minima* in rabbits and guinea-pigs after insulin. The condition resembles death, is incurable, and lasts as a rule for less than twenty-four hours (in mice up to fifty hours).

Pleurisy with Artificial Pneumothorax.—Deuel attributes the pleurisy in artificial pneumothorax, to a large extent, to the mechanical irritation from the high pressure of the gas. The clear effusions disappear if too high pressure is avoided. If they last too long, they are apt to cause fibrous thickening of the pleura. The purulent tuberculous exudates offer also a fair prognosis. Irrigation with iodin solutions is valuable. The outcome is bad in grave mixed infections. He had good results in three instances of mild mixed infection. Thoracoplasty is indicated in grave cases.

Medizinische Klinik, Berlin

20: 1717-1756 (Dec. 7) 1924

*Hemorrhagic Diatheses. H. Curschmann.—p. 1717.
*Germinal Deterioration. F. Müller.—p. 1720. Conc'n.
Sex Statistics of the New-Born. R. Fetscher.—p. 1725.
*Nontuberculous Disease of the Apex. Pal.—p. 1726.
*Symposium on Early Operation for Gallstones. Matthes et al.—p. 1727. Cont'n.
*Prevention of Cancer. G. Scherber.—p. 1729.
*Diphtheria Outside of Epidemics. F. Reiche.—p. 1732.
*Etiology of Chronic Infectious Endocarditis. H. Adler.—p. 1736.
*Reactions with Cerebrospinal Fluid. Blumenthal and Shirakawa.—p. 1738.
Some Therapeutic Notes. Aufrecht.—p. 1741.
Psychodiagnosis and Psychotherapy. H. Fendel.—p. 1742. Cont'n.
Obstetric Breviary. F. Eberhart.—p. 1743. Cont'n.
Present Status of Congenital Syphilis. Rietschel.—p. 1744.
Chancroid. C. C. Saelhof.—p. 1747.
Diseases of Early Childhood. Blühdorn and Völckers. Supplement.—pp. 1-28.

Hemorrhagic Diatheses.—Curschmann deals with the diagnosis of various hemorrhagic diatheses. Heredity, male sex and prolonged coagulation time are characteristic of hemophilia. Normal coagulation time with prolonged bleeding time and extreme thrombopenia indicate Werlhof's disease. Thrombopenia may be also present in grave pernicious anemia, leukemia, typhoid and benzene poisoning. The Rumpel-Leede phenomenon is positive in all hemorrhagic diatheses (including scurvy and essential purpura) with the exception of hemophilia. Extirpation or irradiation of the spleen and blood transfusions are beneficial.

Germinal Deterioration.—Müller discusses the experimental and clinical observations on the sequelae of injuries affecting the germ cells or the fetus. It seems that a predisposition determines the outcome in children of syphilitic parents. Hyperthyroidism of the mother causes comparatively frequently hypogenitalism and homosexuality in the children. Yet he points out that the permanent injuries occur comparatively rarely. The great regenerative force from the union of the ovum and spermatozoon may overcome many injuries. He emphasizes that all this conjecture is based only on the impressions of a physician, not on science: extremely few things in this field are established facts.

Nontuberculous Disease of the Apex.—Pal has observed several instances of catarrh of an apex in persons with homolateral affections of the nasal sinuses. The râles disappeared and reappeared together with the nasal affection.

Symposium on Early Operation for Gallstones.—The collective inquiry on the early operation for gallstones is continued in this issue. Prominent surgeons (Stich, Läwen, Schmieden, and Perthes) give their reasons why it should be done. Prominent internists (Matthes and Umber) speak against it except in the cases in which there are special indications, as mentioned in the last issue by others.

Prevention of Cancer.—Scherber believes that leukoplasia of the tongue and mucosa of the mouth is a basis for cancer. The leukoplasia occurs most frequently in syphilitics who smoke much. It may heal when smoking is discontinued.

Diphtheria Outside of Epidemics.—Reiche publishes statistics of diphtheria in Hamburg during and between the epidemics. The *genius morbi* varies widely, and this causes difficulties in estimation of the value of antitoxin treatment. He lost 4.8 per cent. of the 804 patients treated with antitoxin on the first day of the disease.

Etiology of Chronic Infectious Endocarditis.—Adler describes a case of otherwise typical chronic infectious endocarditis (endocarditis lenta) with repeated findings of a corynebacterium in pure culture in the blood.

Reactions with Cerebrospinal Fluid.—Blumenthal and Shirakawa find that none of the colloidal reactions with the cerebrospinal fluid is superior to the Wassermann test with the original extract from syphilitic liver. The only exception may be sometimes in syphilis of the brain.

Münchener medizinische Wochenschrift, Munich

71: 1707-1744 (Dec. 5) 1924

Conservation of Sheep Blood. J. Hohn.—p. 1707.
The Circulation in Various Postures. Schott and Spatz.—p. 1709.
*Deforming Osteitis with Diabetes Insipidus. R. Schoen.—p. 1713.
Sedimentation Test in Arthritis, etc. H. Herrmann.—p. 1714.
*Ketogenic Action of Proteins. W. Falta.—p. 1716.
Infarction, Pericarditis and Cardiac Aneurysm. Rindfleisch.—p. 1719.
*Increased Reactivity and Lipoids. Haim and Ismet.—p. 1721.
Bismuth Deposits in Mucosa of Mouth. A. Klare.—p. 1722.
*Alimentary Leukopenia and Cancer. H. Seidl.—p. 1722.
Retention of Fetal Bones. K. Volkmann.—p. 1724.
*Tuberculin by the Mouth. H. Czickeli.—p. 1724.
Foreign Bodies in Stomach. C. Heitzer.—p. 1725.
"The Work of the Aorta." O. Ranke.—p. 1725.
"Immunity to Rays." C. B. Hörnicke.—p. 1726.
Diabetes. F. Umber.—p. 1726.

Deforming Osteitis with Diabetes Insipidus.—Schoen's patient has a deforming osteitis affecting especially the skull and lower extremities. There are also exophthalmos, choked disk, spastic symptoms and slight polyuria.

Ketogenic Action of Proteins.—Falta's research points to a specific ketogenic action of proteins, which may be in some relation to their specific dynamic action. The experiences with Petrén's fat and vegetables and with other diets indicate that there is no fixed ratio between ketogenic and anti-ketogenic substances. Proteins lead to acidosis in the presence of fat. He localizes this action in the liver, and believes that muscles use chiefly fat. The tendency to acidosis is individually different. It is much greater in children than in adults. Determination of nitrogen in the urine is necessary in research because the ketogenic action depends on the metabolism of proteins, not on their intake. There is quite regularly a positive nitrogen balance following low protein diets. Underfeeding in diabetes is indicated only in complicating obesity. He never used it as a treatment—occasional fasting days do not mean undernutrition. Restriction of proteins and moderate amounts of carbohydrates are indicated in acidosis, the necessary calories being supplied by fat. Graver cases require Petrén's fat-vegetable diet, which he does not prolong too much. Overfeeding with fat is dangerous, because it may disturb the digestion. It is contraindicated in such cases. In most grave acidosis cases, fat should not be given at all. Insulin does not change these principles except for allowing a better fat supply.

Increased Reactivity and Lipoids.—Haim and Ismet made skin tests with a mixture of tuberculosis partial antigens and an ether extract from human brain tissue. The mixture produced stronger reactions than the antigens alone. Irradiation of the mixture by sunlight and especially by the roentgen rays produced a still greater reaction—the latter affecting especially the lipoid solutions.

Alimentary Leukopenia and Cancer.—Seidl confirms the high incidence of alimentary leukopenia in cancer patients.

Tuberculin by the Mouth.—Czickeli concludes from his observations on children that only enormous doses of tuberculin can produce a reaction if it is given by the mouth. Even then the result is uncertain.

Wiener klinische Wochenschrift, Vienna

37: 1251-1274 (Dec. 4) 1924

Aims of Hygiene. R. Grassberger.—p. 1251.
*Blood Chemistry in Tuberculosis. A. Leimdörfer.—p. 1256.
*Lymphatics in Breast Cancer. F. Mandl.—p. 1257.
*Skin in Tarred Mice. B. Lipschütz.—p. 1258.
*Resection of Coccyx During Labor. E. Graff.—p. 1260.
Colloid Stability of the Serum. Petschacher.—p. 1261. Conc'n.
"Treatment of Diabetes." S. Isaac.—p. 1263.
Death Certificates. A. Haberda. Supplement.—pp. 1-12.

Blood Chemistry in Tuberculosis.—Leimdörfer reports further investigations on a crystallizing base contained in the red corpuscles, and giving a diazo reaction. Its amount is increased in tuberculosis and in beginning syphilis.

Lymphatics in Breast Cancer.—Mandl injected an emulsion of India ink in gelatin in and around eighteen cancers of the breast, before operations. He found that only the healthy parts of the lymph glands took up the ink. He hopes by this technic to be able to furnish data on the progress of lymph metastases.

Skin in Tarred Mice.—Lipschütz examined the parts of the skin of tarred mice which had not been exposed to the action of the tar. He found in the fourth and fifth month in many of them an acanthosis and pigmentation. He concludes that tar cancer is not a mere local disease but is also a result of a change of the whole organism.

Resection of Coccyx During Labor.—Graff successfully concluded a case of difficult labor by resecting the lower part of the sacrum and the coccyx, which was in ankylosis and slanted forward. The intervention was described by Werner as a modification of Eymer's operation.

Zentralblatt für Gynäkologie, Leipzig

48: 2625-2672 (Nov. 29) 1924

The Alleged Menstruation Toxin. A. Labhardt.—p. 2626.
Active Treatment of Febrile Abortion. F. Kermauner.—p. 2628.
Virulence Test According to Ruge. J. Finger.—p. 2629.
*Diabetes in Connection with Pregnancy. A. Springer.—p. 2642.
Abdominal Skin Flap After Amputation of the Breast. L. Heidenhain. —p. 2649.
"Kjelland Forceps." H. Saenger.—p. 2650.
Diagnosis of Looping of Umbilical Cord Around the Fetus. K. Burger. —p. 2651.
Treatment of Genital Prolapse. A. Mandelstamm.—p. 2652.
Case of Cutaneous Striae in a Man. J. S. Galant.—p. 2656.

Diabetes in Connection with Pregnancy.—Springer's patient, aged 25, with no indications of diabetes before or during pregnancy and only a weak positive reaction at term, died a few months afterward in diabetic coma. In the second patient, aged 35, with established diabetes, pregnancy caused no definite aggravation beyond a transient increase in the sugar output. In both cases the unusually large fetus died during delivery. According to Colorni's statistics, 46 per cent. of diabetic mothers died in the first three years after childbirth. Of his 85 cases, 65 were multiparas; 23 were diabetic before the first pregnancy; a total of 23 living children resulted from the 85 pregnancies. Colorni found oversize of the fetus in 19.5 per cent. of diabetic mothers. Springer believes a definite causal relation may exist between the diabetes and the overdevelopment of the fetus, but the infrequency of pregnancy in diabetic women renders conclusions difficult. The experiments of other authors in dogs indicate that removal of the pancreas toward the end of the pregnancy does not cause diabetes, probably because of a retroaction of the fetal pancreas on the mother's organism; but diabetes sets in promptly after delivery. The possibility of oversize of the fetus in cases of established diabetes in the mother calls for close observation of the diabetic patient during pregnancy.

48: 2673-2728 (Dec. 6) 1924

Hysterectomy Versus Supravaginal Amputation for Myoma. J. Halban. —p. 2674.
Case of Multiple Dermoid Cysts in Ovaries. G. Kaboth.—p. 2678.
The Rissmann Aorta Compressor. H. Schultheiss.—p. 2683.
*General Peritonitis. K. Sommer.—p. 2686.
Case of Insensibility to Labor Pains. R. Knebel.—p. 2696.
Echinococcus Cyst in Fallopian Tube. H. Thomson.—p. 2698.
Extra-Uterine Pregnancies. S. Sztehlo.—p. 2699.
Artificial Vagina Made from Rectum. N. Kakuschkin.—p. 2702.

Early Diagnosis and Treatment of General Peritonitis.—Sommer discusses the practical value of the morphologic changes in the blood and exploratory puncture of the abdomen in the differential diagnosis of general peritonitis. The hemogram is also an important aid after operations. These methods are especially helpful in routine practice on account of their simplicity. In his 400 cases of peritonitis, not one patient with septicemia ever recovered. Sommer always operates, because sometimes apparently hopeless cases recover.

48: 2729-2776 (Dec. 13) 1924

*Protein Therapy in Abdominal Operations. E. Holzbach.—p. 2730.
*Dietetic Basis of Eclampsia. W. Gessner.—p. 2732.
Formaldehyd Cauterization of Endometrium. H. Runge.—p. 2742.
*Cause of Noncoagulation of Menstrual Blood. O. O. Fellner.—p. 2745.
Therapeutic Value of Tubal Insufflation. F. Kirstein.—p. 2748.
Simplified Apparatus for Tubal Insufflation. E. Pribram.—p. 2750.
The Hemoclastic Crisis in Icterus Neonatorum. Marondis.—p. 2753.
Cryptogenic Foci of Infection. M. Kerlin.—p. 2755.
Obstetric Pelvimetry. B. Archangelsky.—p. 2760.

Mortality in Abdominal Operations with Protein Therapy.—With conservative surgical intervention in 113 infected cases and radical operation in sixty-eight infected cases, the mortality was 1.65 per cent., one death resulting from uremia with local peritonitis, one from pulmonary embolism with myocarditis, and one from heart insufficiency. The remaining 178 of Holzbach's cases recovered after an average convalescence of about nineteen days. He attributes the almost total absence of peritonitis in these infected laparotomies to the protein therapy.

Eclampsia Statistics in Baden from 1910 to 1922 as Evidence of Dietetic Basis of Eclampsia and Diabetes Mellitus.—Fewer cases of eclampsia occurred during the World War than before or since. The mortality from diabetes mellitus also declined to 40 per cent. of the prewar death rate. Gessner says the decrease resulted because the scanty diet, poor in proteins and fat, made the lowest possible demands on the oxidation powers of the organism. The dietetic factor was subordinate to the mechanical. Little decrease in eclampsia occurred in women leading indoor lives, the reduction being among working women. The most effective prophylaxis against eclampsia in pregnancy is plenty of outdoor exercise to stimulate the gas metabolism. For the obese diabetic, with power of sugar combustion but without the necessary oxygen, exercise and deep breathing in the open air are necessary, in addition to dietetic treatment.

Cause of Noncoagulation of Menstrual Blood.—Fellner's experiments indicated that hormones produced by the corpus luteum and carried into the uterus become mixed with the menstrual blood and render it incoagulable.

Casopis lekaruv ceskych, Prague

63: 1733-1772 (Nov. 29) 1924

Diagnosis of Active Tuberculosis. J. Jedlicka.—p. 1733. Conc'n, p. 1773.
Diagnosis of Extra-Uterine Pregnancy. J. Thaddeck.—p. 1737. Cont'd.
After-Treatment of Mastoiditis. E. Soukup.—p. 1740.
*Elevated Scapula. B. Niederle.—p. 1743. Conc'n, p. 1784.
Survey on Tuberculosis. R. Kimla.—p. 1753.

Elevated Scapula.—Niederle finds that the congenital elevation of the shoulder blades belongs to the same group as the Klippel-Feil syndrome of reduction of the number of cervical vertebrae. He reports the history of a patient who presented both deformities.

63: 1773-1812 (Dec. 6) 1924

*Unusual Mode of Suicide. J. Levit.—p. 1788.
Intravenous Injections of Emanation. F. V. Novak.—p. 1794.
"Malaria Treatment of General Paralysis." Lauterer.—p. 1795.
Pathogenesis of Gout. J. Paroulek.—p. 1795. Cont'n.

Unusual Suicide.—Levit reports on the suicide of a captain who was arrested because of homosexual delinquencies. The man drove a nail, 8 cm. long, into his brain through the parietal bone, using a wooden shoe for the hammer. Two nails bent before he succeeded. He presented very few symptoms before the meningitis set in.

Mitteil a. d. med. Fak. Univ., Tokio

2: 171-337 (Nov. 4) 1924. German Edition

Neurotoxins. I. M. Ohta.—p. 171. Idem. II. Idem.—p. 219.
*Orthostatic Albuminuria. H. Uyeda.—p. 247.
Case of Myeloid Chloroma. Y. Harada and J. Nagai.—p. 321.

Research on Orthostatic Albuminuria.—In the last five years Uyeda has encountered typical orthostatic albuminuria in thirteen men. He observed an inhibiting effect from atropin, epinephrin or pilocarpin on the albuminuria in certain patients. Notwithstanding the preventive kyphotic position of the patient, an injection of epinephrin or pilocarpin produced the symptom in two out of ten cases. He concludes that venous stasis in the kidney does not explain the whole phenomenon. An international bibliography is appended.

Hospitalstidende, Copenhagen

67: 725-740 (Nov. 12) 1925

Spontaneous Rupture of Uterus at Term. Suture. Recovery. J. M. Nielsen.—p. 725.
*Lipemia. II. Bing and Heckscher.—p. 729. Conc'n, p. 748.

Research on Lipemia.—Bing and Heckscher state that the fat content of the blood (primary ether extract by their method) of 213 fasting patients ranged from 0.5 to 3.16 per cent., but 0.12 per cent. seemed to be the highest normal figure. The lowest figures were noted in exophthalmic goiter (3 cases), and thyroid treatment seemed to reduce moderate hyperlipemia in jaundice, diabetes, failing compensation, etc. The highest figures were encountered in certain cases of diabetes and in nephrosis. The lipemia was often low in the young. Alimentary tests sometimes revealed a latent hyperemia. The 64 patients with hyperlipemia included 19 cases of disease of urinary organs, 3 of uric acid arthritis, and 14 of diabetes, while in 11 other diabetics the lipemia was below 0.13 per cent.

67: 761-776 (Nov. 26) 1925

*Biology of Cancer Cells. A. Fischer.—p. 761.

Biology of Cancer Cell.—Fischer comments on three properties displayed by cancer cells (chicken sarcoma) outside of the organism, which distinguish them from normal cells, namely, the ability of the cancer cell to proliferate from a single isolated cell; to transform blood plasma and normal tissue cells into substances which it then utilizes to build up its own plasma, and its abflity to disintegrate coagulated blood plasma. These three parasitic properties, manifest in cultures outside the organism, amply explain its malignant nature in the living organism.

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The Schiøtz Tonometer. H. Schiøtz.—p. 1101.
Mortality from Digestive Disturbances in Infants. Nicolaysen.—p. 1012.
Anatomic Study of Certain Spinal Diseases. C. Semb.—p. 1016.
*The Arneth Blood Picture. H. Bjørn-Hansen.—p. 1031.
*Cancer in Norwegian Province. J. Thoner. Supplement, pp. 1-155.

Blood Picture in Clinical Diagnosis.—Bjørn-Hansen shows the value of the Arneth classification of the neutrophils as an aid in determining whether a process is infectious or noninfectious, and whether the infection is still active, in addition to its value in differential diagnosis. His conclusions are based on 1,800 counts in 300 cases, this evidence demonstrating the superiority of the Arneth over the ordinary differential count, from both diagnostic and prognostic viewpoints. In acute abdominal disorders, serial counts are desirable. Application of the Arneth-method in practice is restricted because of the technical skill and experience and the time it requires.

Cancer in Eastern Norway.—Thoner collected 120 cases of cancer from 1902 to 1921, a rate of 16.3 per ten thousand inhabitants, 73 men and 47 women, in twenty years, in a population averaging 3,679. Of these, 61 per cent. were in the alimentary tract, only one in the uterus, and 14 were sarcomas. The apparent increase of cancer during the last decades he attributes chiefly to better diagnosis, also to the larger number of old people. About 50 per cent. of the cases occurred between the ages of 60 and 80. After 80, few cancers develop. Thoner describes cancer as a disease associated with the beginning of senility. In general, cancer existed over the entire, rather mountainous district, with uneven distribution. External causes seemed to be factors in 41 per cent. of the cases (trauma in 19.5 per cent.). Husband and wife were affected in only 5 or 6 per cent. of the married patients. Scattering incidence was common. There was little, if any, indication of transmission of the disease. With unusual opportunity in this stable and easily surveyed population for investigation of familial occurrence, cancer was found in 71.7 per cent. of the relatives of patients, namely parents, grandparents, aunts, uncles, brothers, sisters, nephews, nieces and cousins. This proportion, however, corresponds approximately to the 76 per cent. of all the families of the district. Cancer incidence among brothers and sisters showed about the same percentage as in the general population. Thoner's report is published at the expense of the Knutsen Cancer Research Fund.